Do-It-Yourself Computer Repair: Is It For You? ★ FREE

California's Computer Magazine

OCTOBER 11—NOVEMBER 8, 1985

MicroTimes™

The Abaton Transform: New Tool For Macintosh Developers

Paul Stannard (l) and Paul La Costa of Megahaus

HP's Thinkjet Printer

Columns: Macintosh, Commodore, Data Base Management, Telecommunications

Megahaus' Mega-Success

ACR

ADVANCED COMPUTER RESEARCH PRESENTS:

PURE POWER

ONE MEGABYTE
MEMORY CARD
FOR YOUR
IBM PC
OR
COMPATIBLE

ONLY

$225.00

LIST PRICE $295

FEATURES:

ONE MEGABYTE OF MEMORY

NO CHIPS TO ADD

FULLY SOLDERED CONSTRUCTION FOR HIGH RELIABILITY

USES HIGH SPEED 256K CHIPS

EASY USER INSTALLATION

MULTIPLE BOARD CAPABILITIES

HIGH SPEED RAM DISK

FULL ONE YEAR WARRANTY

TO PLACE AN ORDER SIMPLY ENCLOSE A CHECK OR MONEY ORDER FOR $225.00 PER BOARD PLUS $3.00 SHIPPING CHG. TO:

ADVANCED COMPUTER RESEARCH
18533 ROSCOE BLVD., SUITE #122
NORTHRIDGE, CA. 91324
(818) 344-8655

DEALER INQUIRIES INVITED

We've Got An Office Assistant To Eliminate All Your Typewriters.

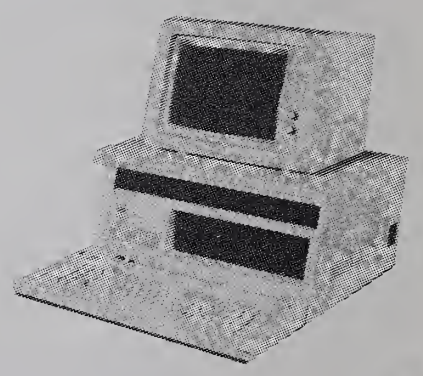
THE WANG OFFICE ASSISTANT.

Can be used for direct typing, so there's no need to keep a typewriter nearby for simple one-line typing jobs. Runs Wang word processing — the industry standard. Does spreadsheet calculations, graphics and file management. A special feature makes typing forms fast and easy. One printer can be shared by up to four systems.

Call us for more information or a demonstration.

—SPECIAL OF THE MONTH—
IBM PERSONAL COMPUTER

640K • 1 disk drive • 20MB hard drive • 10MB back up tape
Multifunction card • Color system • DOS



A VERY POWERFUL SYSTEM $3999

MODEMS

Hayes Smart Modem 1200B	$335
Hayes Smart Modem 1200	395
Cermatik	250
Promodem 1200	315
Bizcomp XL	370

I/O CARDS

IBM Mono/Color Graphics	$230/$224
Hercules Mono/Color Graphics	325/190
Paradise Graphic Board	285
Paradise Multi-Display	310
Everex Graphic Edge	400
Tecmar Graphic Master	490
AST 6-Pak Plus	260

PRINTERS

Epson FX-85/185	$390/$520
Epson LQ-1500	1020
Okidata 192/193	390/520
Okimate 20 w/plug-n-play	240
Brother DX-15XL	378
Brother HR-25/HR-35	599/868
Toshiba P351	1245

MONITORS

IBM Monochrome/Color	$250/580
Amdek 310A	175
Amdek 600 Color	450
Taxan Color	CALL
P.G.S. MAX-12	190
P.G.S. HX-12	465
P.G.S. SR-12	550

AT&T PC 6300
w/20MG Hard drive
for under
$3000

Special Discount
For Aerospace Employees
Show Us Your Badge!!

Authorized Dealers
Of VersaCad.

LOHA COMPUTERS

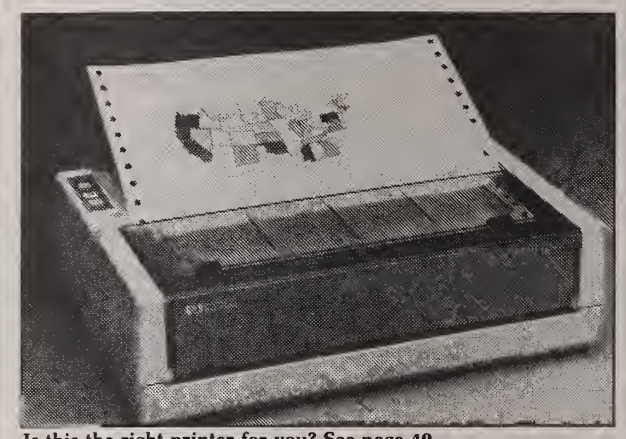
Corporate Accounts Welcome

(805) 373-1005
1429 E. Thousand Oaks Blvd., #100
Thousand Oaks, CA 91362

(714) 758-1182
1151 N. Euclid Street, #L
Anaheim, CA 92801

MICROTIMES

FEATURES



Is this the right printer for you? See page 40.

40 HP's ThinkJet Printer: A Great Leap Forward?
By Mike Markowitz
This inexpensive printer's revolutionary design may make it the only printer you'll ever need.

42 Gateway To The Future
By Deborah D. Wolfgram
Orange County residents can take advantage of this new service, which allows them to do banking, shopping and other tasks without leaving home.

44 Do-It-Yourself Computer Repair
By Tim Tyler
The Cascio School of Computer Technology fights the high cost of computer repairs by teaching users to perform most of these tasks themselves.

46 Abaton Technology: Shortcuts To Broaden The Mac's Software Base
By Mary Eisenhart
This Santa Monica company's new products, the Abaton Transform and Drive 5.25, greatly increase the amount of software available to Macintosh users.

48 Serious Mac Exploration With MacNosy
By Mary Eisenhart
Software that allows developers to explore the inner workings of Macintosh and gives them access to source code.

DEPARTMENTS

8 Letters

10 Edit Mode
By Don Hamilton
A look at laser disk technology, which may eliminate the file cabinet forever.

14 Business Software Reviews

24 Newsreels

58 Reviews

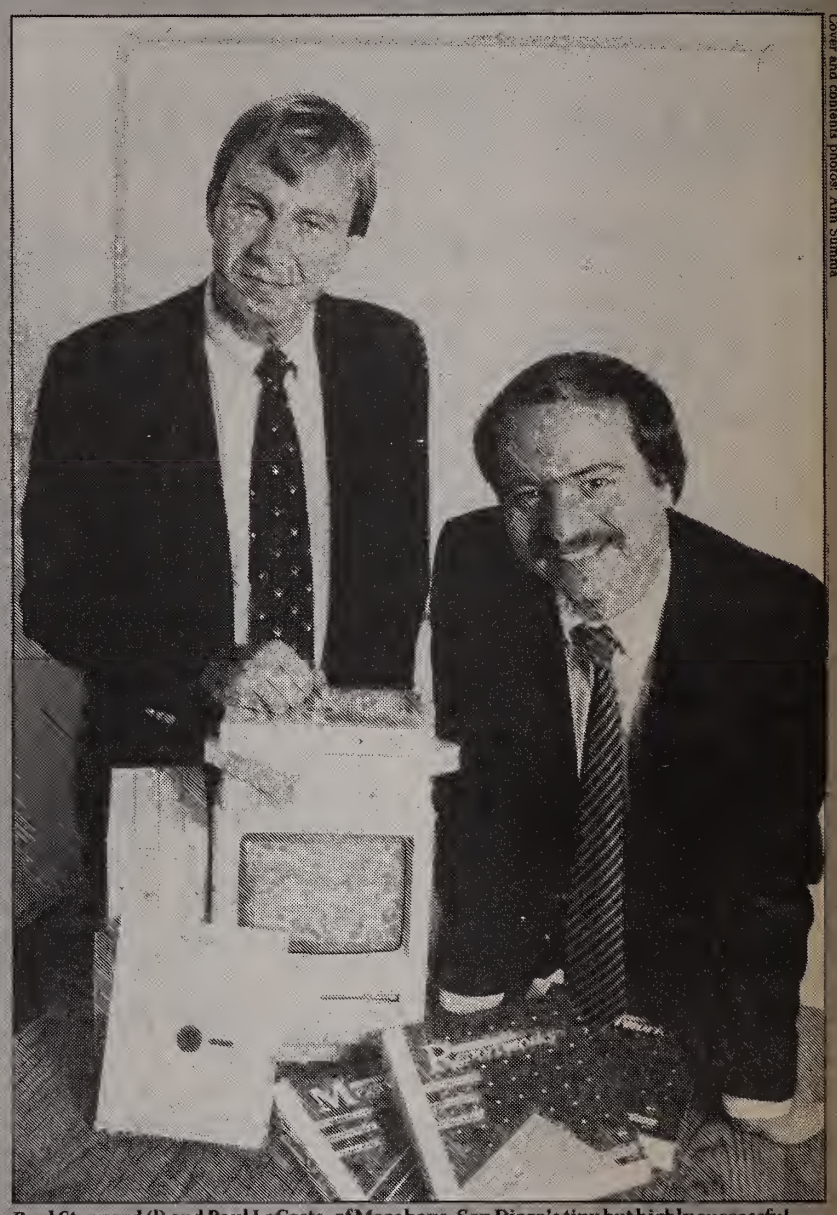
60 User Group Network

68 Classifieds

70 System Bugs

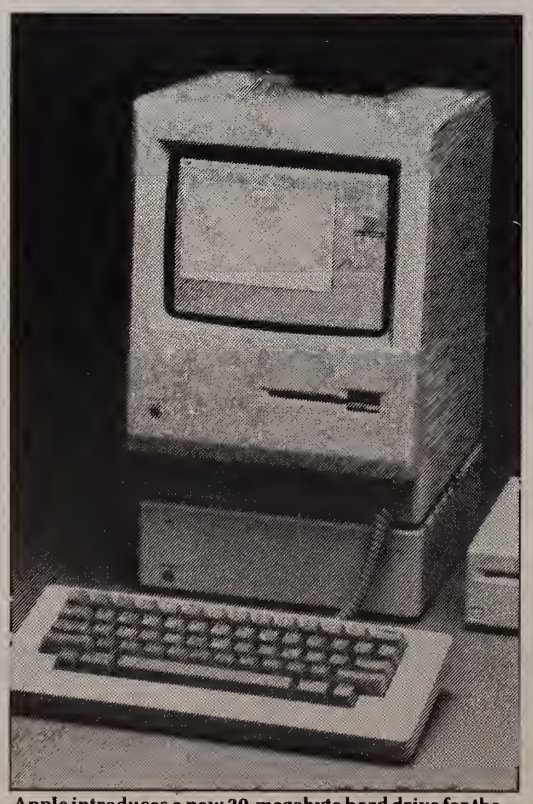
COVER STORY

28 Megahaus: *Small Company, Mega-Success*
By John D. Gresham
Megahaus is a small San Diego-based software company. Despite its small size, it's experiencing record-breaking sales with its hit products *Megaform* for the Macintosh and *Megaworks* for the Apple II. Co-founder Paul LaCosta explains how they did it.



Cover and contents photos: Ann Summa

Paul Stannard (l) and Paul LaCosta, of Megahaus, San Diego's tiny but highly successful software company. See page 28.



Apple introduces a new 20-megabyte hard drive for the Macintosh. See Newsreels, page 24.

COLUMNS

50 Data Base Management
By Bill Amatneek
Eleven questions you should ask yourself in the course of setting up an efficient data base.

53 Small Business And Computers
By L.K. Engelhart
Automating your office should be part of a clearly-defined process of strategic planning.

54 Macintosh
By Barbara Leone
The Complete Macintosh Sourcebook is a handy reference for Mac owners, explaining what software exists and where to find it.

56 Commodore
By Matthew Leeds
Rewards and pitfalls that await the fledgling software developer.

57 Telecommunications
By Brock N. Meeks
Some of the free and nearly-free bulletin boards available to online information seekers.

SUPER SAVER SPECIALS

NEW EMERGENCY POWER FAILURE PROTECTION

As Low As $299.95

PRINTERS

STAR MICRONICS SUPPORTS
FULL LINE GRAPHICS
TRACTION & FRICTION FEED INCLUDED
SWITCH SELECTABLE FOR NLQ 30/40/50 CPS
OPTIONAL SERIAL INTERFACE S-M

SD10 2K/160 CPS	$369.95
SD15 16K/160 CPS	$489.95
SG10 2K/120 CPS	$259.95
SG15 16K/120 CPS	$419.95
SR10 2K/200 CPS	$539.95
SR15 16K/200 CPS	$649.95

PANASONIC
BOTH TRACTION & FRICTION FEED
ONE YEAR GUARANTEE
3 MILLION CHARACTER RIBBON/
REINKABLE TO ADDITIONAL 3M/CHAR

P1090 10" 100 CPS	$239.95
P1091 10" 120 CPS	$299.95
P1092 10" 180 CPS	$439.95
P1093 15" 160 CPS	$619.95
BROTHER LETTER QUALITY	
BROTHER HR-15	$349.95
BROTHER HR-25	$630.00
JUKI 6100 LQ	$399.95

DRIVES

TEAC 1/2 HT	$119.95
APPLE 1/2 HT	$149.95
APPLE //c	$149.95
10 MEG SEAGATE	$469.95

ACCESSORIES

MONITOR BASE 14"	$ 16.95
POWER DIRECTOR W/SURGE PROTECTION 225 WATTS	$299.95
64K MEMORY KITS (per set)	$ 9.99
256K RAMS 150 NS	$ 2.79
64K RAMS 150 NS	$ .59

IBM F-100 Multifunction par/ser/clock/memory
$189.00

Keytronics Look-a-Like Keyboard
$149.00

REPAIR! REPAIR!

SGC Computer Goods is truly a full service computer store. We have a fully staffed, modern test and repair facility. We offer fast turnaround and the lowest labor rates in town. Call (415) 796-5950 today.

SOFTWARE

BANK ST FILER	$ 45.95
BANK ST MAILER	$ 45.95
BANK ST SPELLER	$ 45.95
BANK ST WRITER	$ 45.95
DAZZLE DRAW	$ 39.95
PRINT SHOP	$ 32.97
SIDE WAYS	$ 39.60
MIND PROBER	$ 29.97
SALES EDGE	$165.95
THINK TANK	$ 99.00
COPY II PLUS	$ 29.95
MULTIPLAN	$ 79.95
APPLE SOFT COMPLIER	$119.95
WORD STAR	$231.95
WORDSTAR/MAIL	$324.95
MULTIPLAN(Z80)	$134.95
TYPING TUTOR II	$ 27.95
DOLLARS & SENSE//e	$ 79.95
DOLLARS & SENSE//c	$ 84.95
SENSIBLE SPELLER	$ 86.95

IBM

HOME ACCOUNTANT PLUS	$ 99.95
FRAMEWORK	$439.95
DBASE II (msdos)	$339.95
DBASE III	$379.95
SIDEKICK	$ 39.95
BANK ST WRITER	$ 49.95
C COMPILER (PCDOS)	$239.95
CONCURRENT (PCDOS)	$199.95
SIDEWAYS	$ 39.95
MIND PROBER	$ 29.95
MANAGEMENT EDGE	$169.95
SALES EDGE	$169.95
PC PAINTBRUSH	$ 94.95
PC PAINT BRUSH w/mouse	$199.99
THINK TANK	$129.95
LOTUS 123 VER 1.A	$329.95
SYMPHONY	$459.95
MAIN ST FILER	$ 69.95
WORDSTAR 2000	$324.95
WORDSTAR 2000+	$394.95
R-BASE 4000	$324.95
R-BASE 5000	$429.95
MICROSOFT CHART	$169.95
MICROSOFT PROJECT	$169.95
MS WORD (PSDOS)	$249.95
DOLLARS & SENSE W/FORECAST	$129.95
MULTIMATE	$319.95
NORTON UTILITES (3.0PC/MSDOS)	$ 69.95

MACINTOSH

HOME ACCOUNTANT	$ 68.95
MACLION	$261.95
SONG PAINTER	$ 49.95
PC TO MAC & BACK	$119.95
SMARTCOM II	$119.95
HIPPO-C LEVEL 1	$103.00
HIPPO LEVEL II	$275.96
THINK TANK 128K	$ 99.99
THINK TANK 512K	$169.95
JAZZ	$399.99
MICROSOFT CHART	$ 89.00
MICROSOFT FILE	$125.95
MULTIPLAN	$125.95
MICROSOFT BASIC	$100.95
TYPING TUTOR II	$ 34.95
MIND PROBER	$ 29.00
DOLLARS & SENSE	$129.95
COPY II PLUS	$ 32.95
ONMIS 2	$219.95
ONMIS 3	$341.95
DB MASTER	$113.95
ELECTRONIC CHECKBOOK	$ 54.95

MODEMS

SMARTMODEM 1200	$398.95
SMARTMODEM 1200B	$359.95
MICROMODEM //E	$189.95
PROMETHEUS 1200	$294.95
PROMETHEUS 1200A (PLUG IN)	$298.95
PROMETHEUS 1200B IBM NO SFT	$239.95
AUTO DIAL/ANSWER PROMETHEUS MAC/PAC	$339.95
PROMETHEUS 1200B W/SFT	$288.95
ANCHOR MARK 1	$ 89.00
ANCHOR MARK XRS232	$119.95
MARK 1200	$269.95
VOLKSMODEM 1200	$199.95

SUPER XT COMPATIBLE

- 256K On Board
- CPU 16 Bit 8088 Processor
- 8 Expansion Slots
- 2-1/2 ht Teac 360K Drives
- Hi-Resolution Monitor
- 135W Power Supply
- Multifunction Keyboard
- Floppy Controller

$1119.95

USED COMPUTERS

EAGLE XL Portable
10 Meg, 1-Floppy, All Software, 90-Day Warranty
$1895.00

MACINTOSH 512K With Imagewriter 90-Day Warranty
$1899.95

MACINTOSH UPGRADES
100% Software & Hardware
1 Year Warranty
Free Switcher 4.0
$179.95

SGC COMPUTER GOODS
est 1981

700 Mowry Ave., Fremont, CA 94536
415-791-7091
Century Plaza Shopping Center
(across the street from Dolan's Lumber)

master charge

MON. - FRI. 10 A.M. TO 8 P.M.
SAT. 10 A.M. TO 5 P.M.

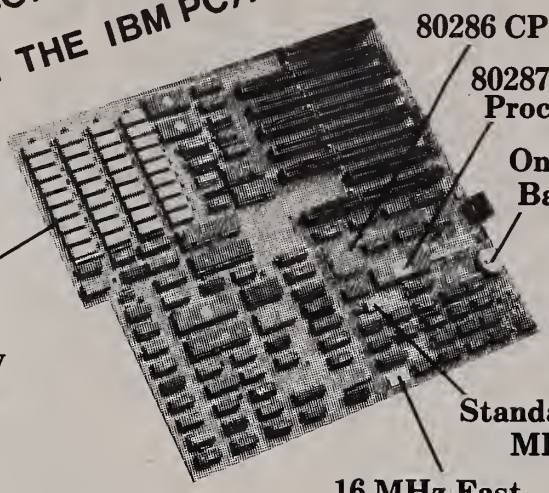
VISA

SMARTEK 1 MEGA BYTE SYSTEM BOARD

SMARTEK INC.

2000 WYATT DR., SUITE 3 SANTA CLARA, CA 95054
TEL: (408)748-8504 988-4112 988-4113

FULLY COMPATIBLE WITH THE IBM PC/AT



FEATURES:

* Dual speed 8 MHz or 6 MHz CPU (80286) selectable by software (Optional 9, 10 MHz CPU) selection with standard 6 MHz operation
* 1 Mega Byte standard main memory on board, 16 Mega Byte in system in the protected virtual address mode
* Multiuser and multitasking operation
* Virtual memory and disk capability
* 2 sockets for 27256 eprom (SMT Bios will be available with a nominal fee)
* 8 I/O expansion slots: 6 with dual 62 pin and 36 pin connectors, 2 with single 62 pin connectors
* Socket for 80287 Math processor
* CMOS clock and calender circuit
* On board battery backup, no external cable required
* External hardware reset capability
* Power on LED indicator
* NO selection jumper (no headache for system configuration)
* Standard IBM AT dimensions: 12 inch by 13.8 inch with 6 mounting holes that fit AT or compatible chassis
* Standard AT power supply connector
* Lowest cost for highest AT performance
* Fully assembled and tested board $995
* EASY board with all sockets and components installed except ICs $495
* High temperature burned-in for highest reliability
* 90 days warranty, parts and labor

OEM, VAR, Dealers and Corporate purchasing discount inquiry invited

(IBM AT are trademarks of International Business Machines Corporation)

MICROTIMES

Fact: 25% of all computers and computer users are in California

Fact: MicroTimes reaches them!

Over 400,000 people read MicroTimes every month

Think About It

(415) 652-3810 (213) 467-7878

MICROTIMES

California's Computer Magazine

PUBLISHER/EDITOR Dennis Erokan

EDITORIAL

ASSISTANT EDITOR Mary Eisenhart

EDITORIAL ASSISTANT Keith Moerer

CONTRIBUTING EDITORS Bill Amatneek, Robert D. Athey, Jr., L.K. Engelhart, John Gresham, Matthew Leeds, Barbara Leone, Michael Markowitz, Brock Meeks, Jeff Spurrier

CONTRIBUTING WRITERS Jina Bacarr, Matthew Berry, Gordon Bruce, Bruce Cannelongo, Joe Celko, Larry Clark, Randy Dennis, Robin J. Dunitz, Jack Epstein, James Evans, Bennett Falk, Laurie Foster, Steve Foster, Carter George, Ken Goehner, Lion Goodman, Walter Grams, Dave Johnson, Rose Johnson, Benjamin Krepack, Michael Murphy, Doug Pencille, Pamela Pescara, Vanessa Schnatmeier, Ed Shurtleff, Karen M. Sullivan, Tim Tyler, Michael Wiesenberg

CONTRIBUTING PHOTOGRAPHERS Pat Johnson, Robert Matheu, Richard McCaffrey, Ann Summa, K. Gypsy Zaboroskie

EDITORIAL CONSULTANTS

EXECUTIVE EDITOR Don Hamilton

ASSOCIATE EDITORS Pat Hamilton, Kim Nelson

DESIGN

ART DIRECTOR Lee Ann Nelson

ASSISTANT ART DIRECTOR Jarice Kirkendoll

ART STAFF Mary Angela Collins, Elizabeth Fenimore, Frank Hildebrand, Sara Lewis, William Salit, Salette Totaro

CAMERA OPERATORS Michael Brewer, Elizabeth Rettig

TYPESETTING Image Factory, The Typesetting Shop, Inc.

ADMINISTRATION

ASSOCIATE PUBLISHER Miles Hurwitz

ASSISTANT TO THE ASSOCIATE PUBLISHER Shelley Higgins

ACCOUNTING MANAGER Maggie Kelly

ACCOUNTING Greg Doza, Steven Engelfried

ADVERTISING

ADVERTISING DIRECTOR Joe Amadeo

ASSISTANT TO THE ADVERTISING DIRECTOR Carol Priest

ASSISTANT ADVERTISING DIRECTORS Jeff Rosenfield (Los Angeles), Chuck Stanley (San Francisco)

NATIONAL ACCOUNT DIRECTORS John Lockhart, Bill Reefer

ADVERTISING & PROMOTION Barry Green, Carolyn Schwartz, Jane Shepherd, Gordon Sutton

ADVERTISING ASSISTANTS Maria Beal (San Francisco), Deni St. Clair (Los Angeles)

National Rep.: Carol Oppenheimer

DISTRIBUTION

PRODUCTION & DISTRIBUTION MANAGER John Erokan

ASSISTANT TRAFFIC MANAGER Noel Perry

DISTRIBUTION STAFF Danny Fernandez, Bruce A. Fraser, Frank Grygus, Ron Hershewe, Art Holland, Eliot Kleinberg (asst. L.A.), Kirk Lanier, Ali Lexa, Rico Lozano, Mike Nellany, Joseph Rafalo, Bill Smith Racks by Free Distribution

MICROTIMES FOUNDERS Dennis Erokan, Don Hamilton, Pat Hamilton

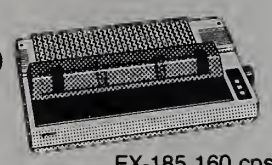
This Vol. 2, No. 10, October 1985, Whole No. 14 MicroTimes, California's Computer Magazine, is published by BAM Publications, Inc., 5951 Canning St., Oakland, CA 94609. Phone (415) 652-3810. Los Angeles Office, 1800 N. Highland, Suite 220, Hollywood, CA 90028. Phone (213) 467-7878. San Jose Office, 36 Harold Ave., Suite 8, San Jose, CA 95117. Phone (408) 244-4400.

MicroTimes™ is © 1985 by BAM Publications, Inc. Subscriptions rate: 12 issues, $12. All rights reserved. Reproduction in whole or in part without permission of Publisher is strictly prohibited. Unsolicited material is gratefully accepted, but we can't be responsible for returning it unless it is accompanied by a stamped, self-addressed envelope. The staff and management of MicroTimes do not advocate or encourage the use of any product or service advertised herein for illegal purposes.

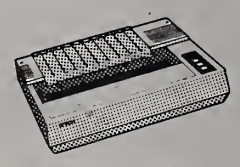
BEST PRICES ON
COMPLETE SYSTEMS
PACKAGES AND ACCESSORIES

EPSON SPECIALS

$465

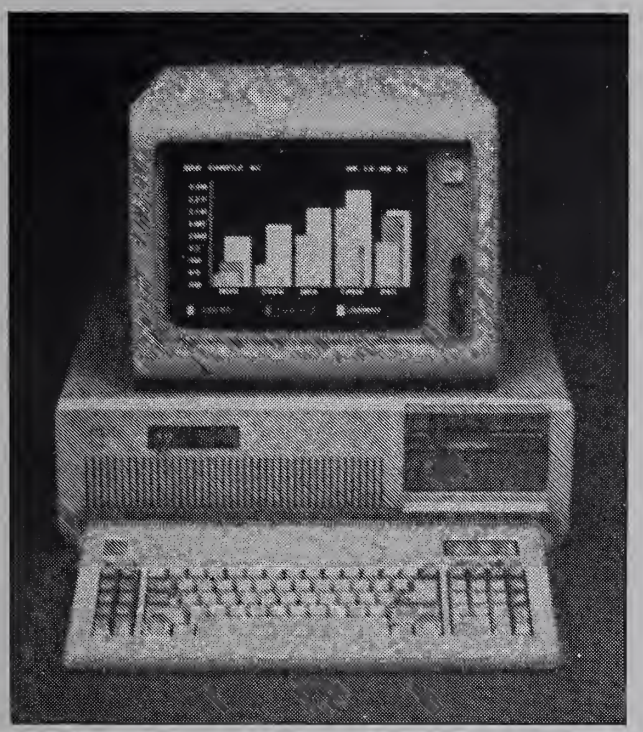


FX-185 160 cps
wide carriage



$349

FX-85 160 cps



IBM AT ENHANCED

512K Random Access Memory
20 MG Hard Disk
1 Disk Drive
Serial and Parallel Ports
P.G.S. Mono Monitor

As Low As **$3858**

All other models available

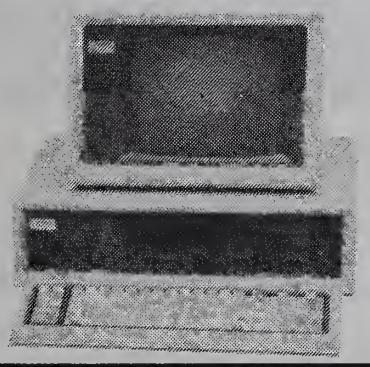
$CALL

SPECIALS OF THE MONTH . . .

COMPAQ DESKPRO

Model 1: 128 K Random Access Memory
One Disk Drive
Six Open Expansion Slots

As Low As **$1695**



CALL FOR OUR COMPAQ 286 PRICES!

LA'S ONLY COMPUTER STORE SPECIALIZING IN
Hardware & Software For Professional Musicians and Composers

Now Available: *Octave Plateau Midi Sequencer Plus for IBM/PC •*
Jim Miller's Personal Composer • Roland Midi Interfaces

We Carry A Full Range of Software For Apple and IBM Computers
Experts in Networking, Multiuser Systems, Accountiung and CAD/CAM Systems

BROKERS
The Computer People

818-342-8703

18639½ Ventura Bl., Tarzana, CA 91356
Convenient Boulevard location Across from Mann's Theater

Trade-ins Welcome Cash Prices Only Limited To Stock On Hand Leasing Available

LETTERS

Mac Challenger Challenged

[The following letter was sent to both **MicroTimes** and Aegis Development, Inc. Aegis' reply follows. We reprint both to provide information to consumers who may be in a similar situation.]

I am a recent purchaser of the *Mac Challenger* software sold by Aegis Development. I bought this program on the basis of a review in the July 15th issue of **MicroTimes** in which Ken Goehner described a number of features not present on the disk I received. I am not referring to the features promised for later versions (satellite launchings, recoveries, EVA's etc.), but rather to the radar scan and the replay controls described in the review as already existing on the *Mac Challenger* disk.

I feel that **MicroTimes** and/or Aegis have cheated me out of my money, since I have not received the product available to the reviewer and was not informed of the difference. **MicroTimes** should have included a version number in the review and Aegis should have made such information available to prospective buyers.

I would appreciate hearing from both **MicroTimes** and Aegis concerning this ripoff.

Howard Benjamin
Berkeley

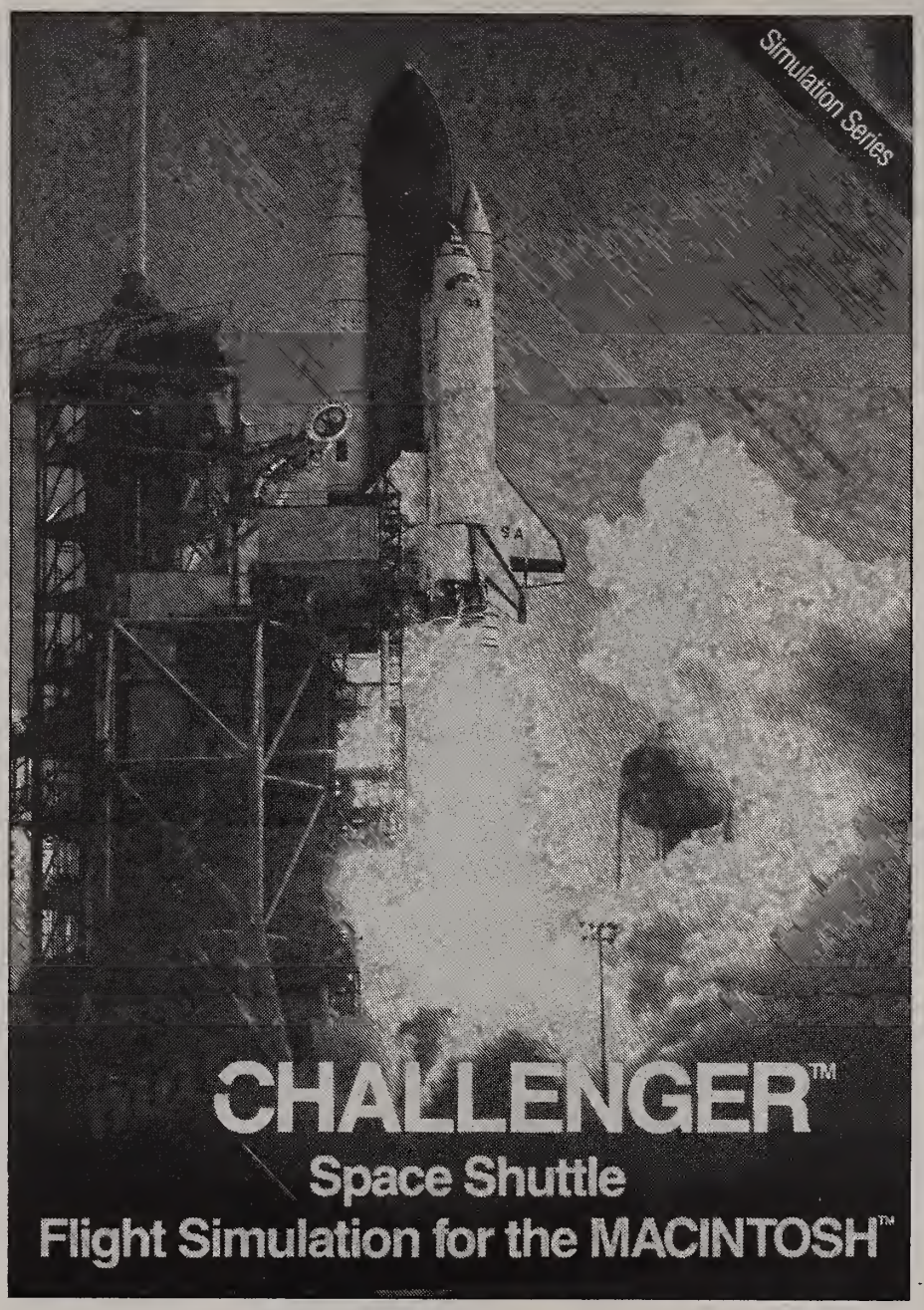
Aegis Responds

Aegis Development, Inc., is very concerned with the current feelings in the software industry that software publishers are not interested in computer consumers or their rights. Although there are always exceptions to the rule, most publishers are in business to support the industry and the consumer. Aegis is no different.

Recently, a purchaser of an Aegis product discovered a version of *Mac Challenger* that did not contain the features or operations as described in a review published in the July 15th issue of **MicroTimes.** The review described the final release, version 2 of *Mac Challenger*. An earlier version of the software had been available for a limited time to several markets around the country.

The purchaser made no attempt to contact Aegis or any of its representatives to determine if in fact there had been an upgrade to the software. Instead, he wrote a series of blasting letters to a variety of industry journalists and to Aegis Development, condemning "rip-off" software publishers.

After some investigation, it was discovered that the purchaser had bought an early version of the program through an unauthorized mail order house. If he had mailed in his registration card, he would have been notified of the new version and manual. If he had dialed the Aegis phone number printed on the package, he would have been instructed on how to receive a free update. As it was, he received the updated disk and user guide with our thanks and apologies once we received his letter.



After some investigation, it was discovered that the purchaser had bought an early version of the program through an unauthorized mail order house. If he had mailed in his registration card, he would have been notified of the new version and manual.

The software industry is rife with rumors about software and advertising for software that either does not include described features, or doesn't exist. That is not good business. As a result, I cannot blame the individual for feeling cheated about buying something other than what he had in mind. However, I am concerned with his tactics in getting the problem solved. They were not very fair.

Although products are normally advertised prior to their release, manufacturers have a responsibility to advertise the features and contents of the software they sell as accurately as possible. Purchasers have an equal responsibility to take actions that solve their problems, not glorify them.

Aegis Development, Inc., has been shipping *Mac Challenger* version 2 since June 1, 1985. Prior to that date, version 1.0 of the software was available for a limited time. All Aegis Development authorized distributors and dealers were notified of the new version when it became available. Owners of *Mac Challenger* who send in their registration cards are updated free of charge.

As any serious computer user knows, updates and revisions to software are normal procedure in this industry. That is one of the main reasons registration cards are provided in most quality products. There are certainly some manufacturers who seem to "disown" their end users once the product is out the door. However, Aegis is totally committed to truth in advertising and to quality computer products.

David Barrett
President, Chief Executive Officer
Aegis Development, Inc.
Santa Monica

CP/M, Please . . .

I'd like to express my appreciation for your services and many informative and interesting articles over the past months on CP/M, CP/M applications such as *WordStar* and *dBaseII*, and public domain programs for CP/M.

Woody McPheeters
Berkeley

Fan Mail

Thanks in part to your story about our *MacMegabytes* product [July 15] and our company, I have been so busy filling demand that I have not been able to write you and say "Thanks" for the kind words.

Needless to say, our product has been booming, and so many people have told us that they saw us on the cover of your magazine.

Stephen Beck
President, Beck-Tech
Berkeley

I just wanted to thank you for your efforts in getting the *Time Line 2.0* review [August 15] completed and printed in such a short period of time. It is actually the first 2.0 review to appear in print! (You beat out *InfoWorld* by three weeks!)

Thanks from everyone at Breakthrough.

Patricia S. Lucas
Communications Manager
Breakthrough Software
Novato

If the computer business is on the skids, I'd never know it. I finally have a moment to say thank you for the write-up you gave Spectre Technologies in your July 15th edition [Buyers Guide]. The boys from Spectre and I appreciate the space, particularly since we're still getting inquiries from as far away as Hawaii.

Ron Gold,
Ron Gold, n.a.
Santa Monica

Letters are heartily encouraged. Please send them to Letters, MicroTimes, 5951 Canning St., Oakland, CA 94609. Please sign your real name and include the town where you live.

"The Year 2020 has Arrived"

Finally, the ultimate in driving...

The Etak Navigator is a computerized map that replaces conventional paper maps. A viewing screen provides the driver with electronically stored information that minimizes the chances of getting lost in an unfamiliar area.

Finally, the ultimate in communications...

A Cellular Car Telephone provides you with clear and consistent phone service while you are in your car. With a Cellular Car Telephone you can call anywhere in the world. You can conduct business world wide, increase your profitability, make appointments and return call backs.

The most successful people are those who employ the most advanced business tools...

The Etak Navigator and a Cellular Car Telephone are the business tools of the future.

Let Advanced Cellular Phone Company show you how these tools can be used to:

- **increase productivity and revenue**
- **increase your efficiency**
- **increase your availability**
- **reduce driving costs**

Authorized Agent For PAC TEL℠ Mobile Access

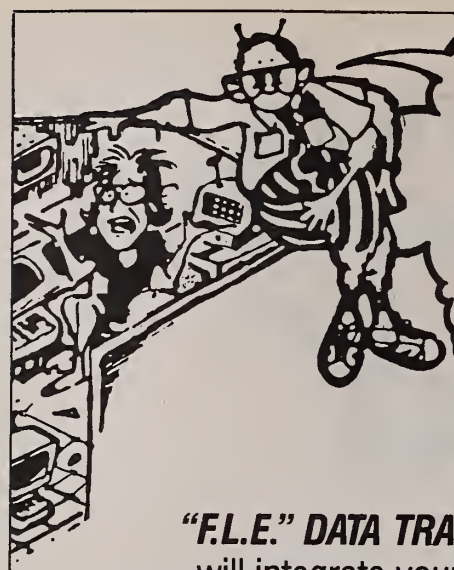
For a FREE demonstration give us a call today!

(213) 838-0609 (800) 354-4200 (714) 542-0366

Or write:

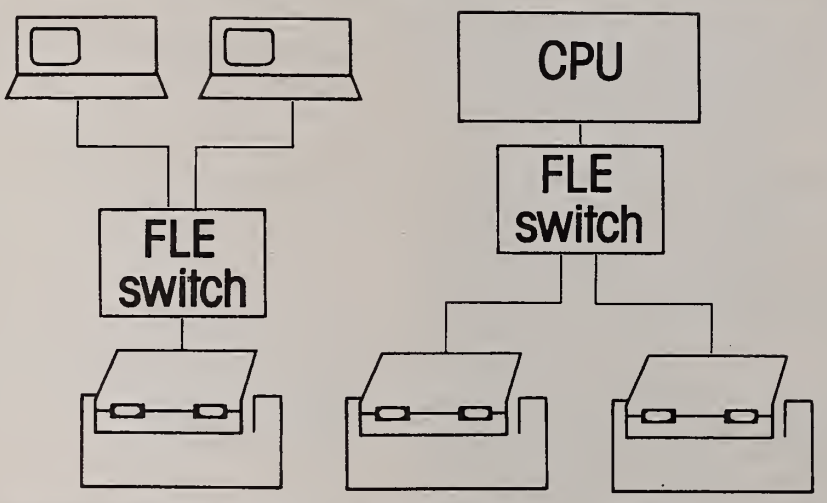
ADVANCED CELLULAR PHONE COMPANY

8885 Venice Blvd., Suite 201, Los Angeles, California 90034



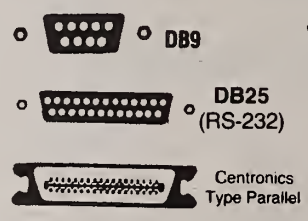
TIRED OF
TANGLED CABLES,
BROKEN CONNECTORS,
BENT PINS,
PLUGGING & UNPLUGGING
HARDWARE?
-OR Buying expensive
Interface Boards?

"F.L.E." DATA TRANSFER SWITCHES
will integrate your computer(s) and
peripherals into a versatile, cost-effective System.



MOST ECONOMICAL

For as little as **$75.00** *Expand* a single RS-232 port on your computer to several peripherals
-OR-
Share several computers with one Economical printer!



AND

RELIABLE

Configurations:
DB-9 (Parallel)
DB-25 (Parallel)
Centronics (Parallel)
Serial: L.E.D.'s
IBM Compatible
Cross-Over Applications
Multi-ports

Five (5) Year Warranty
All Critical Lines Switched
Digitized Printed Circuit Boards

6′ Shielded Cables . . . . . $ 9.95
Power Conditioners: 175 VA 139.00
325 VA 189.00
Serial or Parallel AB Switch Box 75.00

FUTURE LINE ELECTRONICS
(415) 829-1303
(C.O.D.s, Check, Visa, MC)
DEALER INQUIRIES WELCOME

6700 Sierra Ln.
Dublin, CA 94568

EDIT MODE

Laser Disks, Or, Prepare To Trash Your File Cabinets

By Don Hamilton

Are you paying 50 cents per square foot for office space just to store your company files? Much of the space in any office is taken up with cabinets and shelves, not to mention boxes and other storage devices. Individual offices are the worst, because there is often only one person who can retrieve a file from a personnel system — the person who filed it. The same individual will store more information than he/she can typically maintain or find.

Remember Captain Kangaroo and his bottomless pockets? He could pull more tricks and junk out of those pockets than you or I would ever need. I used to wish I had pockets like that where I could store anything I might ever need. Wishes have a way of coming true when it comes to computer technology. In this case, the laser disk is the latter-day counterpart to the Captain's pockets. This little disk is beginning to consume most of the space at many record stores, which means that its price and technology are making its benefits available to the common man. Plans already exist to introduce laser disk systems to many of the personal computers available today.

So what does a laser disk have to do with computers? For one thing, it can hold 500 megabytes (or about 225,000 pages of text). How about the *Encyclopedia Britannica*? How about all the court cases in California this year? These are just some of the things that could be stored on one laser disk.

Another less obvious advantage is that laser disks are less costly storage devices than the equivalent paper storage files. The rental on the space they occupy is much cheaper. The average company uses at least 20% of its available space for storage of personal and company records. A company occupying 20,000 square feet would use approximately 4000 square feet for storage. At 50 cents per square foot, that company could spend $2000.00 per month for storage alone! 20,000 square feet represents a small company of about 100 to 150 employees, so a medium to large-sized company occupying 500,000+ square feet would increase its expenditure for storage accordingly. The overall cost saving on space and file cabinetry is one of the less obvious advantages of laser disk storage.

Floppies and hard disks are currently holding vast amounts of company records and are being used for more applications every day. Mainframe computers and their associated mass storage systems hold inventories, financial records, and other major data base systems.

Individual records such as letters, reports, and all the other paper generated for our dependent society are stored in file cabinets or on personal computers. This is the area that the will be impacted most by the laser disk. You could actually put the entire *Encyclopedia Britannica* in your pocket and forget you were even carrying it on a laser disk.

Here's a small, but important tidbit. A laser disk is hardened against nuclear attack. Just in case a nuclear bomb is detonated in your state, your laser disk will not lose any of its stored data. The computer may be dead, but your data will be alive and well.

I can imagine several places that the government would be able to take full advantage of mass storage and easy retrieval. The free information available from the Library of Congress would be a good place to utilize this system. Every subject the government has ever studied is theoretically available, but much of this information is not accessible because of the difficulty of retrieval. If a fraction of the information available on a subject pertaining to your business area were available on laser disk, you would not have to reinvent the wheel.

One of the results of all this is the increased need for documentation. As the capability of most user organizations increases, so will the requirements. Contracts require more transfer of information than they did five years ago, and that need will increase in the future. The companies that are ready to deal with this information revolution, and those which have already enhanced their data storage capabilities, will win the contracts. Others will be left behind, still clutching their old file cabinets.

Due to the built-in resistance of larger organizations to change, transition will not be made suddenly, even though the need for it is obvious even to the most casual observer. Change has to be planned and implemented over a long period of time, and the wise business will start now. □

On The Dot With Citizen

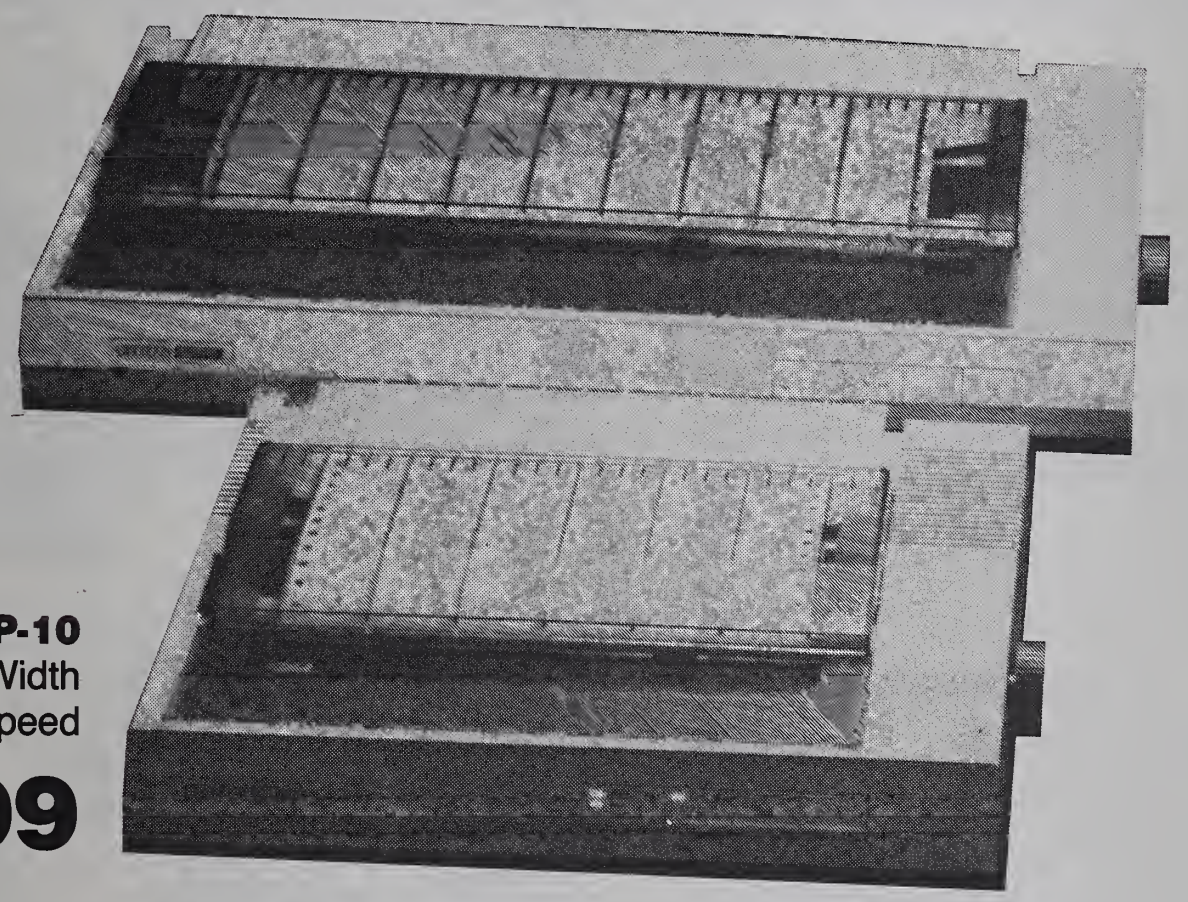
The Finest Dot Matrix Printer Available

Model MSP-15
136 Column Width
160 CPS Print Speed

$549

Model MSP-10
80 Column Width
160 CPS Print Speed

$399



FAST-160 CPS or 200 CPS print speed (draft mode) with excellent throughput.
Correspondence-quality printing at approximately 40-50 CPS.

RELIABLE-Full 18-month warranty on all parts and labor-the longest in the industry.

QUIET-They whisper. In fact, they're amont the quietest dot matrix printers on the market.

WE ARE SPECIALISTS IN PC'S & COMPATIBLES

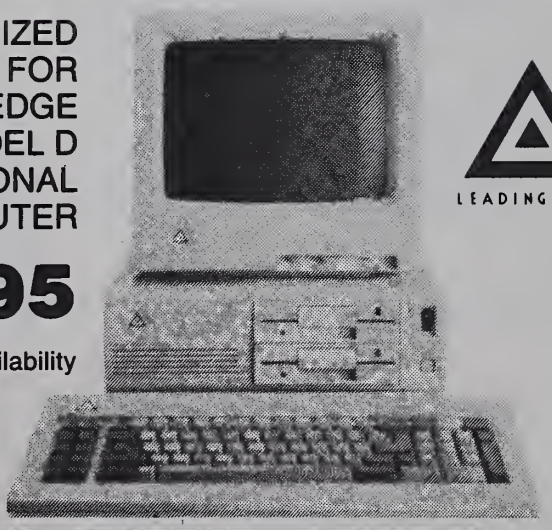
"We Try To Beat Any Advertised Price on IBM and Compatibles. Call for Systems Configurations."

IBM PC 256K, 1 IBM Drives **$1650**
IBM XT 256K, 1 IBM Drive, 10MB Hard Disk **$2299**
IBM AT 512K, 20MB Hard Disk . **from $3699**
Compaq Portable 256K, 2 Drives **$1899**
Compaq DeskPro, 256K, 1 Drive, 10MB Hard Disk **$2339**
Compaq 286 . . . . . **BEST PRICES!**
Sanyo Color Portable **$1899**
XT Compatible, 256K, 2 Drives, w/monitor **$1099**

AUTHORIZED DEALER FOR LEADING EDGE MODEL D PERSONAL COMPUTER

$1495

Call For Availability



LEADING EDGE®

P.C. Systems Design Corp.

455 N. Lake Avenue, Pasadena **(818) 792-1391**

276 S. La Cienega, Beverly Hills **(213) 659-9886**

Visa, M.C., Leasing Available

CALIFORNIA PC LAND
COMPUTER HARDWARE

VISA® master charge

PRINTERS

Okidata ML 92	$349
Okidata ML 93	599
Okidata 192/193	CALL
Okimate 20 Color Printer w/Interface Kit	249
Toshiba 1340	599
Toshiba 351	1295
Brother 15, 25, 35	CALL
Cables	29
Epson FX 85	379
Epson LX 80	269
Epson FX 185	549

MONITORS

Amdek 300	$135
Amdek 310A	CALL
Roland Hi-Res Color	459
Taxan 420	459
Taxan 440	549
PGS Max 12E	179
Roland MB 122A	159
Much More Available	CALL!!!

EXPANSION BOARDS

STB Graphics Plus	$295
AST-6 Pak + w/64K Sidekick	$259
New Paradise Graphics	279
Paradise 5-Pack	199
Hercules Mono	299
Hercules Color	189
Parallel Port	79
Serial Port	79
Sigma 400	569
Tecmar Multifunction	219

ACCESSORIES

MS DOS 2.1	$ 60
64K Upgrade	15
8087 Chip	CALL
80287 Chip for AT	209
IBM DOS 2.1 and 3.1	60

DRIVES

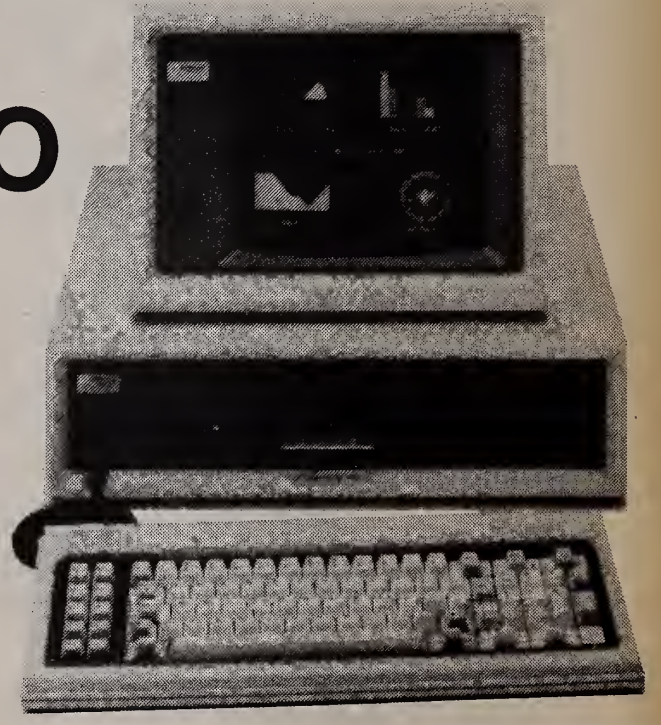
TEAC FD55-BV	$129
Tandon TM-100-2	159
10 MG Hard Disk/Seagate Drive	629
20 MG Hard Disk/Seagate Drive	729

MODEMS

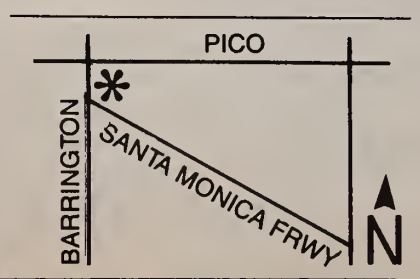
Hayes 1200	$399
Hayes 1200B	359
Biscomp External	399
Biscomp St (Internal w/Software)	359

COMPAQ PORTABLE
256K DUAL DRIVE
$1945

COMPAQ DESK PRO
256K DUAL FLOPPIES
$1945



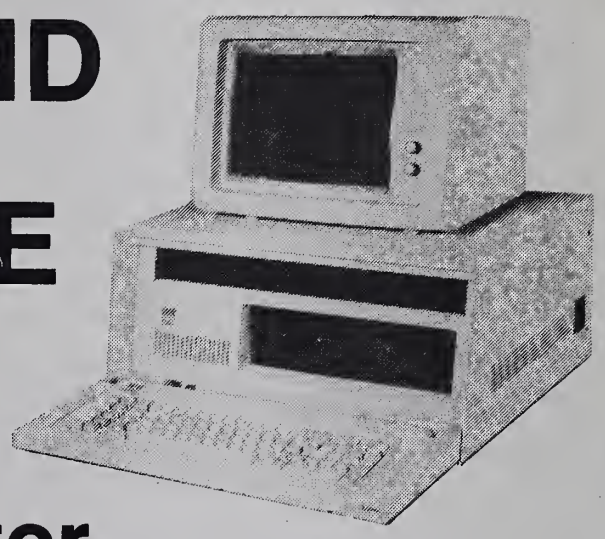
COMPAQ DESKPRO
640K w/dual floppy, 10MB hard disk, Compaq monitor **$2695**



WE WILL NOT

We Build Hot-Rod PC's

SPECIALS!



WE HAVE IBM PC'S AND XT'S IN STOCK CALL FOR BEST PRICE

IBM XT COMPATIBLE SYSTEM

256K dual floppy, hi-res monitor, mono graphics card DOS 2.1

$1295

IBM AT ENHANCED

1.2 MB FLOPPY • 20 MB HARD DISK

$4149

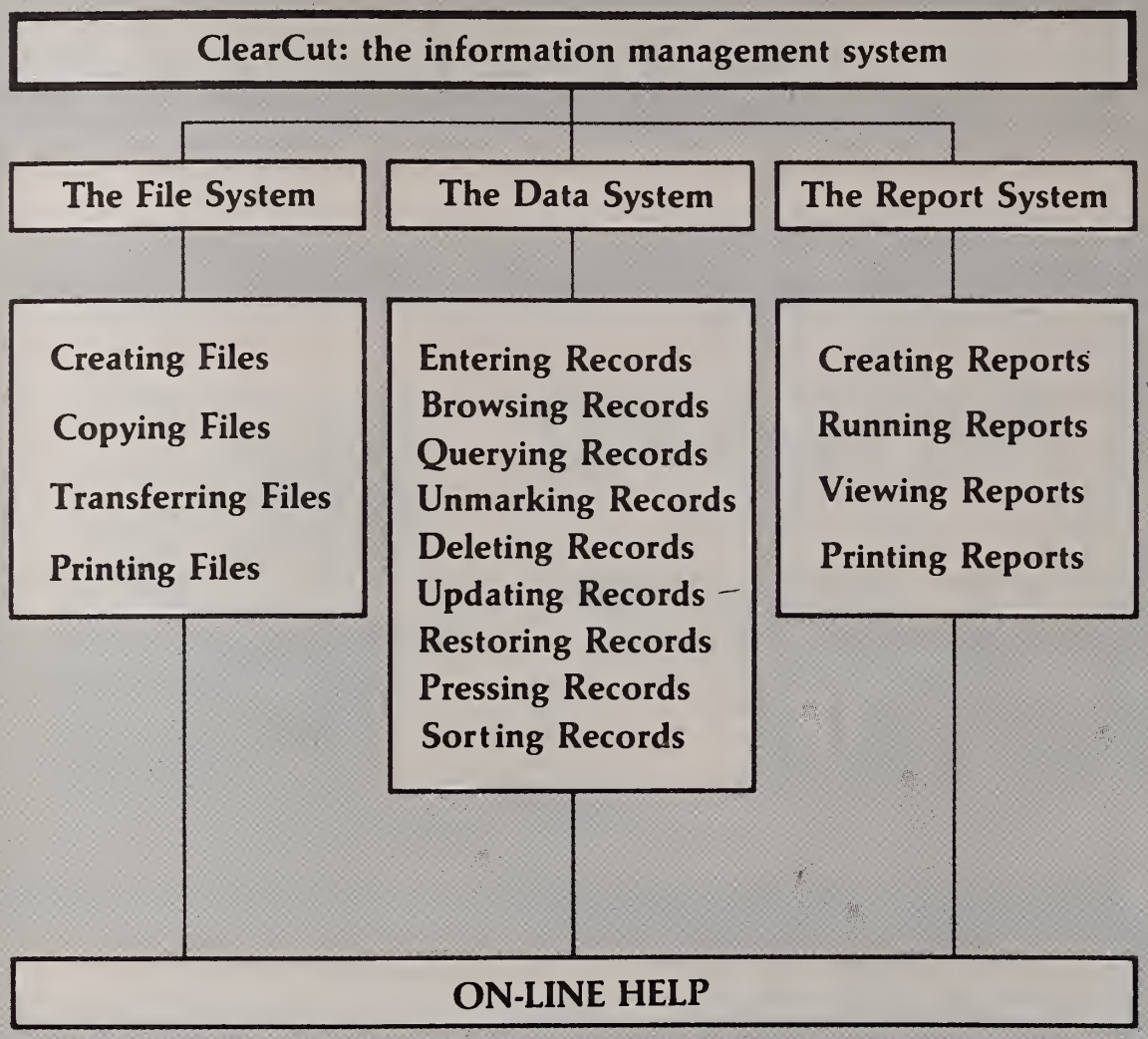
AT PERIPHERALS AVAILABLE:

AST ADVANTAGE BOARD	$495
TECMAR MAESTRO	$379

BE UNDERSOLD!

WEST L.A. STORE
2400 - 2 Barrington Ave.
OPEN MON.-SAT. 10-7

(213) 478-7709



***Clearcut* from Menlosoft is an inexpensive, easy-to-use data base manager.**

DATA BASE MANAGERS

Clearcut

Published by: *Menlosoft*
For: *IBM PC and compatibles, NEC APC III*
Price: $49
Reviewed by: *Bennett Falk*

Clearcut is a form-based information management tool for the IBM PC and the NEC APC III that is inexpensive, easy to use, and well documented. Though it is a relatively small program, it is entirely self-contained. It does not require much in system resources (128K RAM, DOS 2.0 or higher, at least 1 floppy disk drive), yet it achieves truly impressive results.

Clearcut consists of three modules (a "file" manager, a "data" manager, and a "report" manager) held together by a sleek menu interface. "File" management is basically form design and some housekeeping functions. Using a menu-driven full-screen editor, you can create elaborate forms for entering and querying data. *Clearcut* gives you complete control over the screen and its video attributes with "paint" and "draft" commands. Data fields may be defined simply by being marked on a form. When you are finished drawing the form, it is ready for use immediately: simply save it, exit the file manager, and start the data manger.

The "data" manager can be used to enter, query, sort, delete, or update records. Driven by the data management module of *Clearcut*, the form becomes a kind of window on your data showing you one record at a time with a status line showing the number of records in the data file, the number of the currently displayed record, and the number of records satisfying recent queries. If repetitious data must be entered, a "recall" function is available to display the most recent record entered on a blank form. There are also special keys to write the date or time to the current field.

The "report" manager is used to create a more complicated ordering of data than can be achieved just by querying and sorting the records in the database. First a report "form" must be created, and then fields in that form may be linked to the fields in a data entry form. Report design includes the same video attribute control that is available in this file manager. It also includes special formatting features to sort data into groups or aggregates and to allow calculation of totals, averages, counts, minimums and maximums for each group identified. Once a report has been designed, the report manager will allow you to run the report for your current data with output being sent to your choice of file, screen, or printer.

Clearcut is a very useful program with no apparent bugs, and it has two natural audiences. Its ease of use and modest price should appeal to users who are encountering the mysteries of database management for the first time. Its outstanding form-design capabilities should appeal to more experienced users needing a sound data entry tool that can be used to collect data and pass it on to other programs for processing. (*Clearcut* includes a "supplemental program" that will load data from and unload data to ASCII files.)

Of course *Clearcut* has its limits. It would be helpful to see more than one record at a time on the screen when browsing through data. Forms may have a maximum of six screens. *Clearcut* has no provision for disciplining what gets entered into a field. The "data types" *Clearcut* recognizes are very general: some more specialized types of fields (a "date" type, for example) would be very desirable. Editing an existing form can be tricky: you should create a new form similar to the old one and use the "transfer" command to import the data. Identifying the results of queries by "marking" the records can be awkward: unless some action is taken to "unmark" records, the results of queries simply accumulate. The report manager would be more useful if it allowed more than one level of grouping.

Clearcut illustrates one crucial truth about computers and data: the computer you work with will determine how you think about your data. Indeed, to a large extent, the nature of your computer will define what counts as data and what counts as database management. If your machine has an abundance of disk space, database management will be primarily file management. If large amounts of memory and a fast processor are at your fingertips, then database management will be mostly number crunching and sorting. Finally, if your machine has the resources to display your data artfully, database management will be a matter of presentation.

Clearcut falls into this last category. It is a product that encourages you to think about how your data should look both on the screen and on paper. *Clearcut* supports this emphasis on presentation with enough solid "data manipulation" capabilities that it should prove to be a very durable product.

TELECOMMUNICATIONS

CompuTelex

Published by: *MicroComputer Trends*
For: *IBM PC and compatibles*
Price: *$149.00*
Reviewed by: *Joseph C. Fusco*

Organizations looking for a user-friendly software package to help send and receive telex messages with PCs will find an important piece of this communications puzzle in *CompuTelex*.

The telex network has been widely recognized for its ability to move small messages great distances within hours — but there are problems. What if the sender or the receiver doesn't have a telex machine? What if they do but aren't near it? *CompuTelex* provides alternatives to these problems with a link between word processing and global communications.

First, it greatly streamlines the communication process. Most communications software can already access the telex system, but typical users, clericals and non-computer professionals, are not likely to understand communications software. Communications programs, like *Crosstalk* and *Mite*, offer a wealth of options, few of which mean anything to, say, a sales manager who has to get a new price list out to the field. With *CompuTelex*, initiating the communications process requires only the essentials of baud rate, send/receive mode, and a handful of other options, few of which are ever reset once *CompuTelex* is initialized.

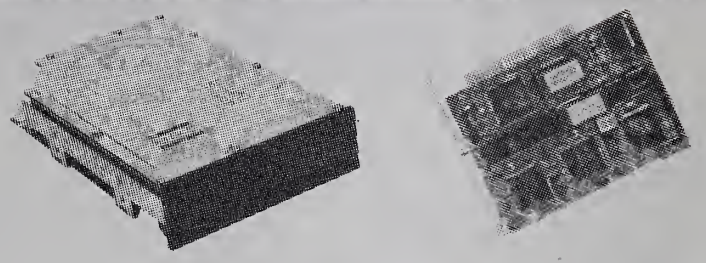
After the straightforward initialization process, users are met with easily understood menus and one-button operation to send or receive messages. In fact, *CompuTelex* makes message transmission easier with a PC than with a telex machine.

Another important convenience is the program's directory. Here addresses of frequently telexed locations can be saved, eliminating the search for telex numbers and answerbacks that never seem to be around when you need them. Names in the directory can even be sorted (though not subgrouped.)

MITSUBISHI

TESTED PAIR
MITSUBISHI 20MB WINCHESTER PLUS OMTI SHORT CONTROLLER

Kit includes Mitsubishi MR-522 20MB Winchester, OMTI 5.5″ controller card, all cables and a manual, ready to install



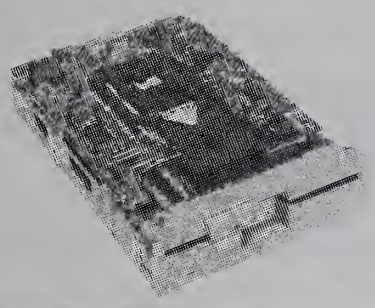
$620.00 Qty. 1
QUANTITY DISCOUNTS AVAILABLE

2 AT COMPATIBLES

M-4854-348US 1.2MB

96TPI—Dual speed operation to read both 96 and 48TPI diskettes—IBM color and style match

$175.00 Qty. 1
Quantity discounts available

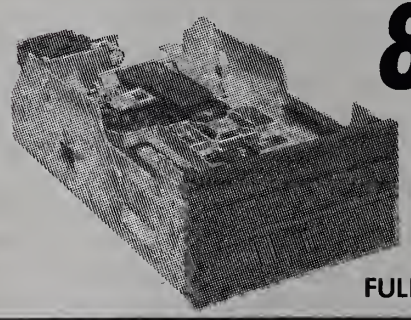


M-4851-A308U 360KB

48 TPI—Industry standard IBM color and style match

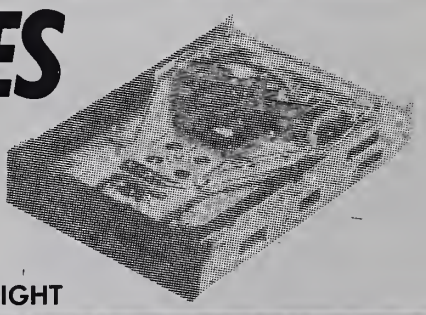
$115.00 Qty. 1
Also available in black finish

8″ FLOPPY DISK DRIVES



M2894
FULL HEIGHT

Mitsubishi continues its commitment to the 8″ drive market with these full and half height models. Please call for price and availability. OEM and distributor discounts available



M-2896
HALF HEIGHT

DISKETTES

MD-2D 4BTPI DSDD—.90/EA/100
MF-100 3.5″ SS—1.90/EA/100
5.25″ DISKETTES IN BULK PACK
WITH SLEEVES
ND-2HD 96TPI PC-AT
COMPATIBLE —2.35/EA/100
NF-200 3.5″ DS —2.35/EA/100
-3.5″ DISKETTES IN WHITE BOX
WITH LABELS

A COMPLETE SELECTION

Mitsubishi offers a full line of floppy disk drives and an expanding variety of Winchester Drives, including:

MF-351 AND 353
3½″ SS AND DS
FLOPPIES

M-4851
INDUSTRY STANDARD
48TPI DSDD

MR-522
20MB WINCHESTER
DRIVE

COMING SOON

10MB & 20 MB 3½″ WINCHESTER DRIVES

1.6 & 2.0MB 3½″ FLOPPY DISK DRIVES

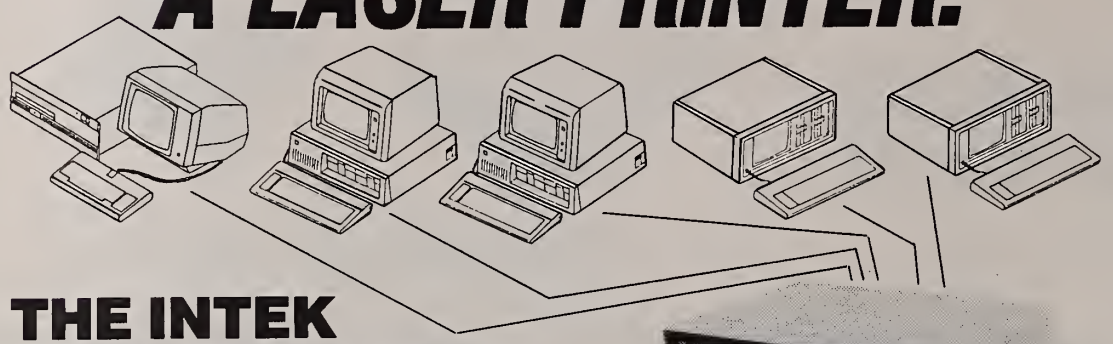
25, 40, 80 MB 5¼″ HALF HEIGHT WINCHESTER DRIVES— HIGH PERFORMANCE

TASK TECHNOLOGY INC.

1333 LAWRENCE EXPRESSWAY SUITE 330
SANTA CLARA, CA 95051
(408) 247-3450
or
1322 BELL AVE.
TUSTIN, CA 92680
(714) 544-7100
An Authorized MITSUBISHI Distributor

DEALER INQUIRIES WELCOME

WHY YOU SHOULD CALL (408) 252-8900 IF YOU OWN A LASER PRINTER!



THE INTEK DATA MANAGER

Allows 5 Computers to share one Laser Printer!

The Data Manager

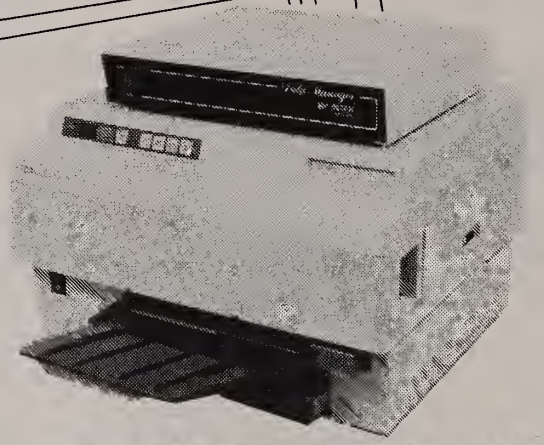
Only $495

Data Manager II $595

(4 in/2 out) (printer not included)

- IBM Parallel Interface Cable $120
- Centronics Parallel Printer Cable $120
- 128K RAM add-on Memory (ups to 192K of spooling) $149.95

CUSTOM INSTALLATIONS AVAILABLE



Z-80A MICROPROCESSOR 1-RS-232C OUTPUT PORT 5-RS-232C INPUT PORTS 64K BUFFER

FEATURES

- Any and All Computers Can Send Data At Same Time
- No Operator Switching or Setup Necessary
- Mix and Match Computers with Printer
- Data Manager Handles Each Incoming Device Independently
- Stores and Distributes Data Automatically
- Gives Five (5) Computers Buffering Capability

INTEK MANUFACTURING INC.

"the Interface People"

10200 Imperial Ave.
Cupertino, CA 95014
408-252-8900

CALL FOR DEALER PRICING AND OEM DISCOUNTS

SUBSCRIBE

Keep up with California computer news!

California has needed a magazine for computer users and MicroTimes is it!

If you're having trouble finding MicroTimes in your area, get your own personal copy delivered by mail.

California's Computer Magazine
MICROTIMES

Send me the next 12 issues for $9.95

☐ cash enclosed ☐ charge card

Visa/Mastercard # _____

Expires _____

Signature _____

Name (please print) _____

Address _____

City _____ State _____ Zip _____

Mail to: MicroTimes Subscriptions
5951 Canning Street
Oakland, CA 94609

BUSINESS SOFTWARE

TELECOMMUNICATIONS

CompuTelex also has its own editor. A last minute change, for instance, can be made in *CompuTelex* instead of returning to the word processor or reentering the entire message. Long messages are usually composed on a word processor, then converted by *CompuTelex* to ASCII for transmission. Short messages can be composed entirely in the *CompuTelex* editor itself.

A file manager for disk access, displaying files, printing messages, changing file names, and deleting files is the last major feature. This is important because telex messages, after time, will create hundreds, if not thousands, of files to be managed. By combining file management, communications capability, a directory and an editor, all of the important message management features are controlled by this one program.

There are some issues, beyond the scope of a *CompuTelex*-type program, that must be considered. But first the program's most serious concern, its $149 price tag, must be explained.

To some this may not be a problem. After all, the telex line and terminal that *CompuTelex* will replace cost about $140 per month! Yet compared

CompuTelex makes sending a telex via PC as easy as using a telex terminal, but with a great deal more flexibility.

to *Sidekick*, a popular $40 program which can access the telex network (though with less ease), *CompuTelex* is pricey for a single-function package. *Sidekick* has established a new, lower price ceiling for the entire class of "convenience" programs. However, there are quantity discounts available for the *CompuTelex*, which is better suited to organizations than individual PC users (who rarely send telex messages anyway).

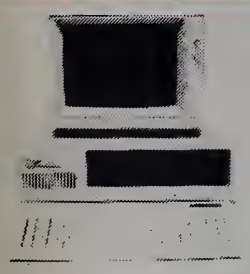
Copy protection is another issue that *CompuTelex*'s publisher might have to rethink. Also, at present the publisher, Micro Computer Trends, offers a ten-day money back guarantee on the product, but this may be of limited value to telex senders who travel or are in remote locations.

Someone who is familiar with micros, word processing and telecommunications, may even find *CompuTelex* too limited. Much of what it does can be handled by communications programs and existing applications packages, if the user knows what he or she is doing. Again, however, this does not describe typical telex users. In an organization where several people have to send and receive messages, simplicity in doing so is the order of the day. Multiple users and complicated instructions never mix in the message business.

Another important feature of *CompuTelex* is its user's guide. It is well organized, clearly written, and nicely presented on the page, almost a model of what user-friendly documentation should be. It could use an index and more configuration information, but when it describes the essentials of sending a message, it couldn't be better. Its descriptions are function-oriented rather than option-oriented. Instead of reading that field "A" does this and parameter "B" does that, there are easily understood "how to" descriptions: how to send a message to a single location with answerback verification, how to send the same message to multiple

LOWEST PRICE HIGHEST VALUE

CALL FOR LATEST PRICES



$995.00

FULLY IBM PC/XT COMPATIBLE

- 256K MEMORY
- 2 x 360K TEAC DISK DRIVES
- 8 EXPANSION SLOTS
- 130W POWER SUPPLY
- FLOPPY DISK CONTROLLER
- IBM COMPATIBLE COLOR GRAPHICS CARD
- TAXAN GREEN OR AMBER MONITOR
- IBM STYLE KEYBOARD

$1295.00

FULLY IBM PC/XT COMPATIBLE COLOR SYSTEM

- 256K MEMORY
- 2 x 360K TEAC DISK DRIVES
- 8 EXPANSION SLOTS
- 130W POWER SUPPLY
- FLOPPY DISK CONTROLLER
- IBM COMPATIBLE COLOR GRAPHICS CARD
- TAXAN HI RESOLOUTION COLOR MONITOR
- IBM STYLE KEYBOARD

PRINTER SPECIAL

CITIZEN™

CITIZEN™ MSP-10 FEATURES

- Switch-selectable compatibility provides software versatility
- Sleek, modern design for quiet operation and excellent reliability
- Excellent throughput with 160 cps print speed
- 40 cps correspondence-quality printing at the flick of a switch
- 80-column print width
- Unique push-feed paper loading system makes loading paper quick and easy
- The industry's longest warranty— 18 months on all parts and labor
- Engineered by the people who've become a wristhold word in fine, precision-engineered timepieces

$329.00

CITIZEN™ MSP-15 FEATURES

- Switch-selectable compatibility provides software versatility
- Sleek, modern design for quiet operation and excellent reliability
- Excellent throughput with 160 cps print speed
- 40 cps correspondence-quality printing at the flick of a switch
- 136-column print width
- Unique push-feed paper loading system makes loading paper quick and easy
- The industry's longest warranty— 18 months on all parts and labor
- Engineered by the people who've become a wristhold word in fine, precision-engineered timepieces

$429.00

10 MEG HARD DISK W/CONTROLER

- FULLY DOS 2.X OR 3.X COMPATIBLE

$549.00

20 MEG HARD DISK W/CONTROLER

- FULLY DOS 2.X OR 3.X COMPATIBLE

$689.00

130W POWER SUPPLY FOR FOR IBM PC OR COMPATIBLES

$99.00

COLOR GRAPHICS BOARD

W/PRINTER PORT

- FULLY COMPATIBLE

WITH IBM COLOR BOARD

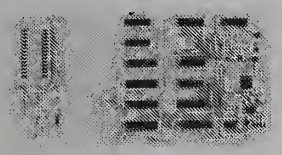
- PRINTER PORT
- RGB OUTPUT ONLY

$129.00

MULTIFUNCTION BOARD

- SERIAL PORT
- PARALLEL PORT
- GAME PORT
- CLOCK W/BATTERY BACKUP
- W/SOFTWARE

OK $149.00 384K $216.00



EPROM PROGRAMER

- 2716-27128 COMPATIBLE
- W/SOFTWARE
- VERY FAST OPERATION

$146.00

COLOR GRAPHICS BOARD

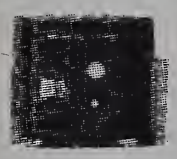
- FULL COMPATIBLE WITH IBM COLOR BOARD

$99.00

MONO BOARD

- 720-348 RESOLUTION
- LOTUS COMPATIBLE
- WITH PRINTER PORT

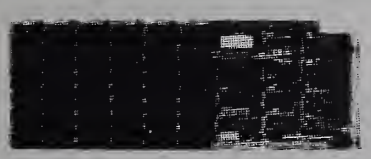
$159.00



FLOPPY DISK CONTROLER

- CAN CONTROL UP TO 4 DRIVES
- FULLY DOS 2 X AND 3.X COMPATIBLE

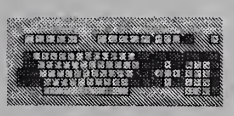
$69.00



384K RAM BOARD

- EXPAND YOUR SYSTEM TO 640K
- ON BOARD EXPANSION TO 384K MEMORY

OK $79 384K $139.00



KEYBOARDS KEYTRONIC COMPATIBLE

5151 SEPARATE CURSOR PAD & NUMBER PAD, W/LIGHTS ON NUM & CAPS LOCK & POWER LIGHT

$129.00

IBM-AT COMPATIBLE KEYBOARD AVAILABLE — CALL!!

5150 SAME STYLE AS IBM W/ BIGGER SHIFT & RETURN KEY W/ LIGHTS ON NUM & CAPS LOCK & POWER LIGHT

$79.00

OTHER SPECIALS

GAME PORTS

GAME PORT BOARD $35.00

AST. GAME PORT OPTION $29.00

300/1200 BAUD INTERNAL MODEM

W/SOFTWARE $239.00

10 DS/DD DISKS $14.50

IBM, MITSUBISHI, INTERDYNE, CITIZEN, AST, KEYTRONIC, TAXAN, TRADEMARKS OF THE RESPECTIVE COMPANIES.
SCC IS A REGISTERED TRADEMARK OF STANDARD COMPUTER CORPORATION.

STANDARD COMPUTER CORPORATION

1254 E. Colorado Blvd. • Pasadena, CA 91106

In Calif. (818) 792-6226 • Outside Calif. (800) 792-6229 (orders only)

VISA MasterCard

© SCC 1985

CALL US WITH A COMPETITIVE

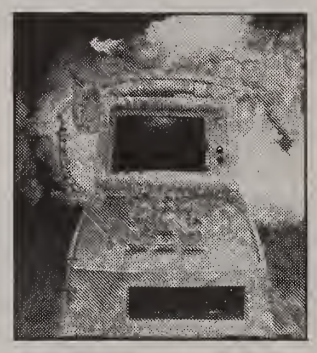
LET YOUR COMPUTER ANSWER THE PHONE

Meet **Watson**™ by Natural MicroSystems™

He can answer your phone, identify your caller & deliver a personal message in your own voice.

He can record your messages and relay them to you - wherever you are.

Use your telephone to create and edit voice messages in the same way you use a word processor to edit text.



- Automatic Dialing
- Voice Calendar
- Modem
- Rolodex

And A Lot More

$595

COME IN TODAY FOR AN INTRODUCTION

THE DATA GENERAL/ONE PORTABLE

- IBM Compatible
- Full-Size 80 × 25 Display
- Up to 512K RAM
- Up to 1.44 MB Disk Storage
- 11 lbs and Battery Powered

from **$1995**

OCTOBER SPECIALS

DS/DD 5¼" Floppy Disks w/case **$12.95**

20 MEG Hard Disk ($40 Installation) **$695**

COMPUTER APPLICATIONS

12792 Valley View Suite F Garden Grove, California 92645
(714) 898-6610

STORE HOURS
Mon.-Fri. 10-7,
Sat. 10-4

QUOTE - WE CAN BEAT THEIR PRICE

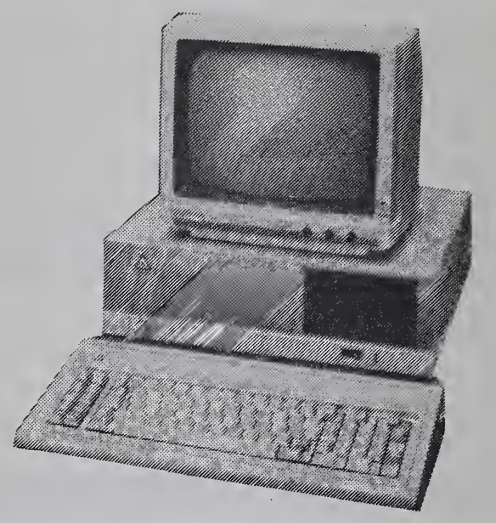
Model D

- IBM Compatible
- Monitor Included
- Needs 25% Less Desk Space
- 256K Expandable to 640K On Mother Board
- Hercules Graphics Emulation
- Color Graphics Interface
- Parallel and Serial Interface
- Selectric Type keyboard
- One Year Warranty

from $1495

LEADING EDGE®

Model M

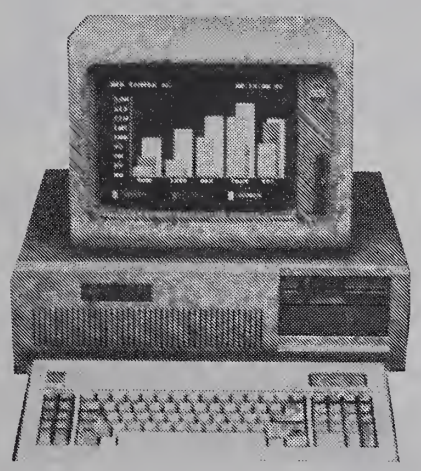


- IBM Compatible
- 50% Faster than IBM
- Monitor Included
- 256K Expandable to 640K
- Parallel and Serial Interface
- Selectric Type Keyboard
- 130 Watt Power Supply
- One Year Warranty

from $1695

AT & T vs IBM-PC

- Graphics (640 × 400)
- Twice the Density
- 16-Bit Bus
- Math Co-Processor
- 8MHz - Twice as fast
- Needs 30-40% Less Desk Space
- Works With Xenix
- Twice As Fast!



- System Unit
- Two ½ Height Disk Drives
- 256K
- Monochrome Monitor
- Monochrome/ Printer Card

from $1995

Prices Subject To Change

COMPUTER APPLICATIONS

12792 Valley View Suite F Garden Grove, California 92645
(714) 898-6610

STORE HOURS
Mon.-Fri. 10-7,
Sat. 10-4

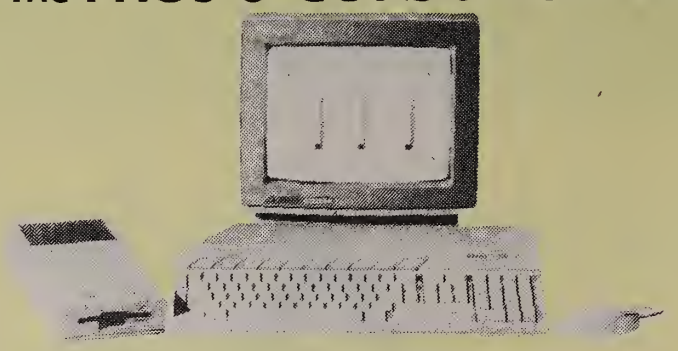
The PROS & CONS of the ATARI 520ST

NEW!

THE PROS:

HARDWARE

- Precision Graphics-640x400 resolution.
- 512 Colors with optional RGB monitor.
- Parallel and Serial Interface Standard.
- Double Density Disk Drive Standard.
- Two Button Mouse Standard.
- Optional 10 MB Hard Drive.
- 68000 CPU Architecture.
- 512K RAM Standard.
- 8MHz Clock Speed.
- MIDI Interface.



Atari 520ST

$699
with monochrome monitor

$899
with RGB monitor

SOFTWARE

Who says software isn't available? Not us, amigo! We have word processing, spreadsheet, accounting, database and integrated packages as well as games and graphics. And more software is showing up every day.

PLUS

Ask us about the Atari National Users Group. Get on line with even more public domain software and take advantage of a growing network of ATARI 520ST Users.

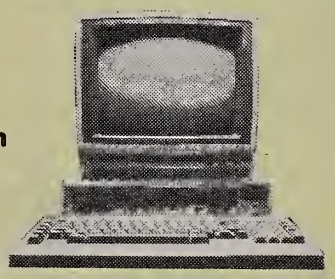
THE CONS: You Don't Own One Yet!

ATARI®
Power Without the Price™

Call Scottsdale Systems Now!
Your Headquarters for Atari and More.

The Fox

A Complete MS-DOS System at $995



Our Fox system is more than the only complete 16-bit, 8088 computer for less than $1,000. The Fax includes more storage, more extras, and more software than systems costing twice as much.

1.6 Megabytes! Dual Drives with 800K storage on each, yet the Fax is nimble enough to read and write to standard 160K, 320K, and 360K formats.

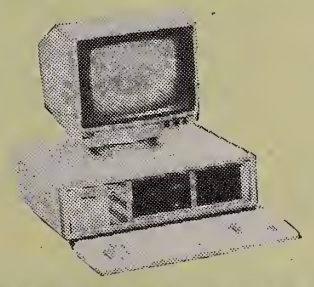
All the Extras that cost extra on other machines are included in our price. You get a full 12", 25x80, display monitor in amber or green, plus RGB color output, a printer port, a better keyboard, and a full 256K of RAM.

Free Software All the software most people will ever need including: MS-DOS 2.11, HAGEN-DOS, DOS Tutor, WordStar 3.3, EasyWriter, Spell, Mail Track, FILEBASE, CalcStar, games, graphics, utilities, and a graphics BASIC.

Strictly speaking the Fax isn't IBM compatible, but will run hundreds of the some programs including dBASE II, Multiplan, and Turbo Pascal. Because the Fax is born on a totally automated assembly line in Japan we can back it with a full one year limited warranty. For a free booklet explaining why the Fox is your best buy call 1-800-FORAFOX and leave your name and address after the beep.

The Fox **$995**

The Quick TurboFox Jumps Over The Big Blue Clones



Introducing the TurboFox. At last - IBM-PC compatability, 256K RAM, a monochrome monitor and bundled software at a price that leads the pack. Compare its features with any other clone on the market.

Greater Speed. Capable of running virtually all PC software at 8MHz the TurboFox can also slow down to IBM's 4.77MHz at the flick of a switch.

More RAM. We've installed a RAM card in one of the 8 PC compatable slots so when you're ready for up to 640K just plug in the chips. For a slight additional fee we can install and test them at time of purchase.

Plus...MS-DOS 2.11, GW BASIC, WordStar, CalcStar, RGB and monochrome outputs, a parallel port and room for extras. If your looking for a low cost, high speed comparable with loads of features and high quality call us now at Scottsdale Systems.

TurboFox **$1499**
Extra 128K RAM $60
Your Choice of a green or amber monochrome monitor.

PRINTERS

STAR SG-10	$239
EPSON LX-80	$244
JUKI 6100	$389
Mare Star & Epson	CALL
All Okidatas	CALL
All Diablo	CALL
Panasonic 1091	$269
Toshiba 1340	$539
Toshiba 352	$1169
DataProducts 8050 ...	$1099

ATT TELEVIDEO ..... CALL

Scottsdale Systems

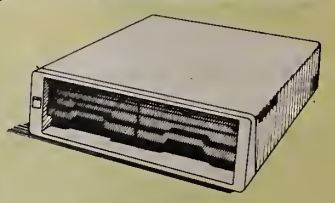
617 N. Scottsdale Rd. #B, Scottsdale Az 85257

VISA (602) 941-5856 master charge

Call 8-5 Mon.-Fri.

We participate in arbitration for business and customers through the Better Business Bureau of Maricopa County

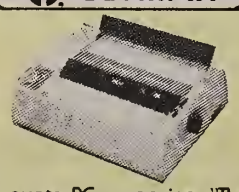
THE BERNOULLI BOX



- Hard disk capacity and performance
- Removable cartridge economy
- Cartridge convenience
- Flexible disk economy
- Winchester capacity
- Unparalleled reliability

20 Mb $2489
5 Mb/Mac $1379
CALL for Half Height Prices

OLYMPIA



To quote PC magazine, "The (NP) printer is a sure thing..." If you're considering the purchase of an Okidata 92, or an Epson FX-80 give us a call before you spend $50 to $100 more for an inferior printer. Let us send you an actual print sample from the NP, and additional information on the features that make the Olympia NP the best value in dot matrix printers. **$295**

SINCE 1980

TELEMARKETING ONLY: If you plan to stop by please phone ahead. Prices listed are for cash. P.O's from Fortune 1200 companies and universities with good credit add 2% / Mastercard and Visa add 3% / Arizona residents add 6% sales tax / Shipping extra / All items are new with manufacturer's warranty / Returned merchandise subject to 20% restocking fee / Personal or company checks take up to 3 weeks to clear / No COD's or APO's. Prices and specifications subject to change / Product subject to availability. Trademarks: Silver Fax, TurboFox, HAGEN—DOS, and Jackintoch, Scottsdale Systems, Ltd.; Wordstar and CalcStar, Micropro International; MS-DOS, and Multiplan, Microsoft Corporation; FILEBASE, EWDP Software. Inc.; dBASE II, Ashton-Tate: IBM-PC DOS, and IBM-AT. International Business Machines.

Houston Instruments

DMP-40	$769
DMP-29	$1795
DMP-41	$2340
Other models	CALL

STB Boards

Graphics Plus II	$249
Mono Plus	$169
Chauffer	$279
RIO Plus II (64K)	$209
SIO II	$139

TERMINALS

Wyse 50	$449
Qume QVT 101 ...	$298
ADDS 3A+	$429

CALL US FOR

ALTOS / ZENITH
TELEVIDEO / MODEMS
AND MORE

TELECOMMUNICATIONS

locations using different formats, how to send a telex with automatic cable conversion, and so forth. Examples accompany each explanation.

Some telex applications are real time, but most are "store and forward," where messages are held in the telex networks' computers until they can be received. CompuTelex functions in both cases, using RCA Telextra for real time, and ITT Time-Tran, RCA Telextra or Western Union Easylink for store and forward.

However, ITT, RCA and Western Union aren't the only message services available. Not only are there other telex, cable and telegram carriers, there are the electronic mail carriers to consider: MCI Mail, GE Telemail, and, though well-known but now defunct, the postal service's E-COM. If sender "A" uses Western Union, but receiver "B" uses MCI, CompuTelex can do little more than format the message and send it half way. To solve this problem, users of this (or any) message system will want to turn to network bridging services like International Electronic Mail Services in Cupertino, CA. These network bridging services provide one-stop shopping for telex and e-mail. They unite various systems and computers, making it possible to send any message, any place, through almost any combination of computers and terminals. In brief, CompuTelex can be expected to perform no better than the network services behind it.

CompuTelex makes sending a telex via PC as easy as using a telex terminal, but with a great deal more flexibility. Single users can take advantage of what the program offers, but a more important application is in organizations with squadrons of PCs, telex machines and people scattered about. Looking to the future, when portable PCs and cellular telephones gain greater acceptance, programs like CompuTelex will probably become a very popular application.

Micro Computer Trends is located at 8421 Wilshire Blvd., Suite 202, Beverly Hills, CA 90211, 213-653-4331, Telex 288890.

UTILITIES

UNIFORM 3.01

Published by: MicroSolutions
For: CP/M
Price: $69.95
Reviewed by: Robert D. Athey Jr.

One of the more frustrating problems with buying a computer is that each machine is limited to a particular type of software. Whether by accident or design, the computer industry avoids standard disk sizes and formats, perhaps to ensure software sales for the company that developed the software. We are therefore subjected to the bewildering variety of 8", 5¼" and 3½" disks, floppy and semi-floppy, double side and single side, double density and single density. This array will get even larger soon, as the magnetic fields used to impress data on a disk will soon be non-standard.

Even if you have the same single-side double-density disks as your neighbor, you can't swap files, games or whatever! Each type of computer formats disks differently, too. Computer designers have a blank disk to start with, as the magnetic coating is continuous throughout the surface covered. They build into their package of control software a set of instructions that places a selection of tracks and sectors, the reference areas they need to locate the data that will eventually be recorded on the disk. The choices—sizes and locations of the tracks and sectors, such as the width of the magnetic record strip—are strictly arbitrary, and determined by expendiency and the design engineer's requirements. The net result is that formats are unique to the computer, which limits you to software trades with those people that have the same computer you have. If you're in a large user group, that's not a serious limitation. However, one editor I deal with has an IBM PC, while I have a CP/M computer. It would certainly be easier on both of us if I could send her an ASCII file on a disk for her to edit.

There are several commercially available solutions to the problem; *UNIFORM* is one of the first. *UNIFORM* is a program that will format your disks to any one of a phenomenal number of other computer formats. The version reviewed here was prepared by MicroSolutions for an old Kaypro II with no software or hardware modifications, and the compatible computer formats are listed in the tabulation below.

FORMATS THAT *UNIFORM* WILL PREPARE AND
COPY TO OR FROM CP/M

ACTRIX
CROMEMCO CDOS
CROMEMCO with Int'l Term. CP/M
DEC VT-180
HEATH with Magnolia CP/M
IBM with CP/M-86
IBM PC-DOS Version 1
IBM PC-DOS Version 2
IMS 5000
KAYPRO II
LOBO MAX 80
MORROW MD-2
NEC PC-8001
OLIVETTI ETV 300
OSBORNE I
OSBORNE Executive
PHILIPS PC-2010C
SEEQUA Chameleon CP/M
SUPERBRAIN JR
SUPERBRAIN 128 byte/sect.
SUPERBRAIN 40 track
SYSTEL II
TI Professional CP/M 86
TRS-80 Mod 1 Omicron CP/M
TRS-80 Mod 3 MM CP/M
TRS-80 Mod 4 MT CP/M
TRS-80 Mod 4 CP/M
XEROX 820
XEROX 820-II
ZENITH Z-90 48 TPI
ZENITH Z-100 CP/M

There are drawbacks to *UNIFORM*'s list of compatible computers. For instance, my version will only read from (and not write to) the TRSDOS formats. (This may be a peculiarity of the Kaypro II version; I hear that other versions allow CP/M to do TRSDOS transfers.) I can't trade with my Apple user friends, either. Apparently, the Apple disk is not the standard disk used by the IBM or CP/M devices.

The documentation for *UNIFORM* is a small, hard bound book with a bonded plastic film cover. The printing is quite readable, and the instructions are quite clear. However, this should include a warning that CP/M 2.2e will foul up the operation, and that *UNIFORM* should be operated using the CP/M 2.2 version that came with the machine. A pair of pages were transposed in printing (a slip of paper is enclosed with instructions to read

Still Cooking After All These Years.

Big 8th Edition
100,000 copies
in use worldwide.

This friendly yellow box continues to disappear from thousands of dealer shelves every day. There seems to be no end in sight.

Now in its big 8th Edition, *MICRO COOKBOOK* has been a consistent Best Seller for over 2 years.

When we last looked, over 100,000 copies were being used by homemakers cooking for their families, singles cooking for themselves, and roommates cooking for each other.

And we're not sure we've counted all the caterers, party planners, home economics students, even television chefs.

All people who like to eat, and want to have fun doing it.

And now, there's more. We've cooked up 14 excitingly packaged *RECIPE DISKS* to help you build your collection in a hurry. Believe us, we know what it feels like to be a hungry Cookbook customer.

Remember too, *MICRO COOKBOOK* adjusts ingredient quantities to serving size, updates your shopping list, and offers ready reference for ingredient substitutions and nutritional information — all built in — all automatic.

And more.

"...Micro Cookbook is really the American Dream..." says the New York Times.

Order your copy today.

Pinpoint™
(formerly Virtual Combinatics)
Box 13323 Oakland CA 94661
(415) 530-1726

Please send the big 8th Edition of *MICRO COOKBOOK* and/or the *RECIPE DISKS* I've marked below.

Qty. Total

_____ Micro Cookbook $49.95 $_____

Recipe Disks for Micro Cookbook $19.95 ea.

_____ Soups & Salads _____ Meatless Meals
_____ Kids Cookery _____ Special Diets
_____ Appetizers _____ Desserts
_____ Daily Breads _____ Wok Cooking
_____ Food Processor Cooking $_____

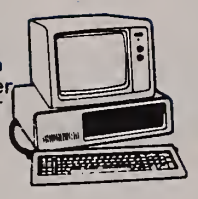
Sales Tax $_____
Shipping $_____
TOTAL $_____

Add 6.5% sales tax if delivered in California. Add $3 per order shipping.

Name_____
Address_____
City_____
State_____ Zip_____
☐ Check or money order enclosed
☐ Charge my ☐ Visa ☐ Mastercard
Expiration Date _____/_____/_____

GRAND OPENING SALE

IBM PC/XT FULLY COMPATIBLE SYSTEM
• 8088 CPU with 8087 Optional • 810S, 256k On Boord • 1 Teac FD-55 BV Slim Drives w/Controller Color Grophic Cord • 135W Power Supply • PC/XT Fully Compotible Keyboord



ONLY $699.00

512k Ram Card 0k, Expandable to 512k	$69.00
Parallel Printer Card	39.00
Game Adapter Handle 2 Joysticks	35.00
IBM PC/XT Fully Compatible Mother Bare Board	49.00
Monochrome Graphic Printer Bare Board	34.00
Color Graphic Bare Board	24.00
384k Multifunction Bare Board	34.00
Disk Controller Bare Board	24.00
Keyboard Fully IBM Compatible, LED on NUM & Caps Lock Keys	75.00
Teac FD-55B Slim Drive DS/DD, 360k	99.00
Panasonic JA551-2 Slim Drive	95.00
10MB Hard Drive w/Controller	459.00
20MB Hard Drive w/Controller	639.00
PC/AT Power Supply	Call
Quimax Color Monitor	$460.00
Quimax Monochrome Monitor (13'')	$160.00
4164 64K Dram, Set of 9	9.00
Joystick for IBM & Apple, 2 cables included	25.00
Printer Cable	11.00
Speaker	3.50
Disk Box, Holds 50 Disks	11.00
Disk Box, Holds 100 Disks, with lockable lid	17.00
Disk Drive Cleaning System	33.00

90-day warranty on all products
Dealers and OEM Welcome
UPS Shipping Daily

WE OFFER LOW PRICE AND HIGH QUALITY

SAVE UP TO 50%

IBM XT FULLY COMPATIBLE MOTHER BOARD
8088 CPU with 8087 Optianal
With B10S • 8 I/O Slots
ok, Expondoble to 256k on 8oard
Same Dimension As I8M PC/XT
~~$269.00~~ $169.00

MONOCHROME GRAPHIC CARD
With Printer Port
80 x 25 Text Mode
720 x 348 Resolution
~~$155.00~~ $109.00

COLOR GRAPHIC CARD
RGB & Composite 80 x 25 Text Mode
640 x 200 Resolution
~~$109.00~~ $79.00

MULTIFUNCTION BOARD
ok, Expondoble ta 384k • Seriol/Parollel Port
Clack Calendar • Game Adapter
Cables Included • Rom Disk, Spooler
~~$145.00~~ $119.00

FLIP-TOP CASE
8 Slot Back Panel
Maunting 8racket & Hardware Included
Good for IBM PC/XT Mother Board & Power Supply
~~$79.00~~ $59.00

135W POWER SUPPLY
Gaod For PC/XT & Other PC/XT Compatible Side On-Off Switch
• 4 Drive Pawer Plugs
110/230 VAC Convertible
~~$109.00~~ $85.00

FLOPPY DISK CONTROLLER
Standard DS/DD
Run 2 Internal & 2 External With Cable
~~$75.00~~ $49.00

TINMA COMPUTER
13151 Brookhurst Street Garden Grove, CA 92643
ORDER HOT LINE (714) 636-7060

STORE HOURS:
Mon-Fri 9:00 AM - 6:00 PM
Sot 10:00 AM - 5:00 PM

master charge VISA Terms: Visa, M/C, Check, C.O.D.

No Service Charge On Credit Cards

IBM & IBM PC/XT ore trademorks of Internotionol Business Mochines
Apple is the Trademark of Apple Computer Inc.

MICROTIMES CLASSIFIEDS WORK!

page 4 before page 3). The main copy of the program may be stored in a pocket provided inside the cover, a good idea for protection and retrieval.

UNIFORM operates quite simply, with menus every step of the way. Help exists for the first menu, with very lucid directions. The main menu has three choices: "format," "write to" or "read from." You must format a blank disk in the other computer's format before you write to it from your CP/M files. (The only formatting option available to me was single-side, double-density, 48-tracks-

UNIFORM is a program that will format your disks to or from any one of a phenomenal number of other computer formats.

per-inch, but that is apparently a limitation of my Kaypro II. Versions for other computers may have more options available.) Formatting is slow (substantially slower than that done by the CP/M 2.2e I reviewed earlier); Dwight Chew did some time comparisons in the July BAKUP (Bay Area Kaypro Uses and Programs) Newsletter showing *UNIFORM* slower than the standard Kaypro CP/M copying/formatting programs or *UNIFORM*'s chief competitor, *COMPAT*. I don't consider the slowness of formatting a serious problem.

The copying function is also easy. You can instruct the program to copy a string of files; you can copy one file or a dozen. The directory of the disk to be copied is displayed with a number assigned to each file, and you simply type in the number of the file(s) you want transferred. The directory should show how many bytes are being transferred, so you don't try to overload a disk, but .... maybe in an upgraded version.

There are frequent warnings in *UNIFORM*'s documentation about the fact that programs (COM files) may be copied but will not run in the new format or computer. That's not a surprise, when you think about it. Each computer has unique sets of circuits for the electrons to run around in the chip(s), and the instructions to control their running have to vary from computer to computer. It would be like trying to drive in Baltimore using a Cleveland street map—you could move, but nothing meaningful would result.

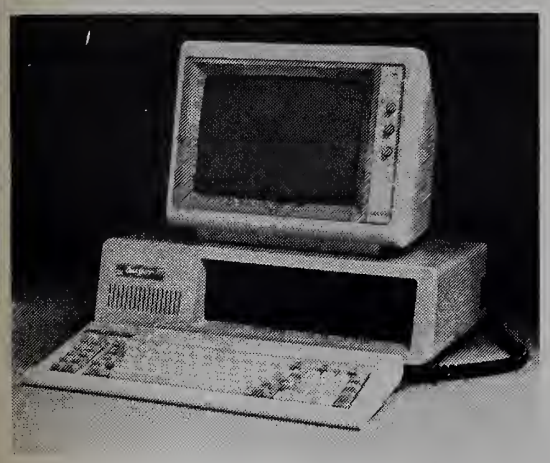
The documentation says that BASIC programs may be transferred and run (provided you have an appropriate BASIC compiler). I expected that the BASIC programs might not run optimally and might need a little tweaking; that suspicion was confirmed when I sent some BASIC game programs (from public domain, of course) to a friend with an IBM PC. One of the thirteen ran correctly, some ran with errors, and lots had compiling errors. Luckily, my friend is a BASIC programmer, and will be able to iron out the difficulties.

In late July, responding both to Dwight Chew's article in the Newsletter and my observations on *UNIFORM*, MicroSolutions offered me an updated version. According to their tests, *UNIFORM* is only slow on older Kaypro machines. Not having received the updated version two months later, I can't comment on it, nor have I verified their statement about *UNIFORM*'s speed on other machines. (MicroSolutions, 125 South 4th St., DeKalb, IL, 60115.)

AMERICAN DIGITAL DISCOUNT ASSOCIATION, INC.

DIRECT MAIL MARKETING COMPANY

SUPER PC/XT SYSTEM

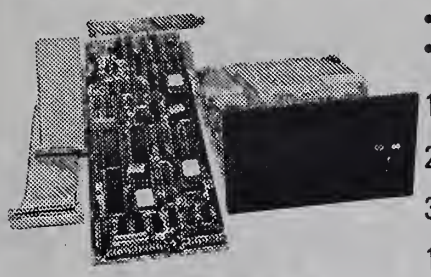


Our Price $1095.00

Includes: One Year Warranty

- With 256K on Board
- CPU: 16 Bit 8088 with Optional 8087 Coprocessor
- Expansion Slots: All 8 are IBM PC/XT Compatible
- Two Half Height, 360K 5¼" DS/DD 48 tpi Floppy Disk Drives and Controller
- Hi-resolution Monochrome Monitor with Color Card
- Multifunction Keyboard
- Runs PC-DOS/MS-DOS and CP/M-86
- 135 Watt Power Supply

HARD DISK SYSTEM



- High Reliability • Controller Included
- Convert PC to XT Economically
- Fits into One Disk Drive Slot
- by RODIME High Performance

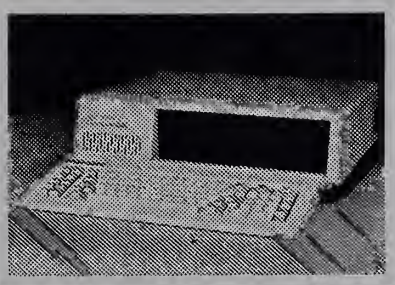
10Mb (Fixed)	$495
20Mb (Fixed)	$595
33Mb (Fixed)	$1295
10Mb (Removeable)	$1395

SUPER PRINTER

- 120 cps Dot Matrix w/Letter Quality Mode
- Friction & Tractor Feed
- Panasonic 1091

$259.00

BASIC SYSTEM UNIT - Only $695.00



Features:

- IBM PC/XT Compatibility
- With 256K Memory On Board
- 8 IBM Compatible Expansion Slots
- Multifunction on Keyboard
- Keyboard Cable
- 135 Watt Power Supply
- Factory Warranty

SUPER PC IXT SYSTEM

Includes All Features of Our Super PC/XT Plus More

- 4 Layer, 640K Motherboard
- 155 Watt Power Supply
- AT Style Keyboard

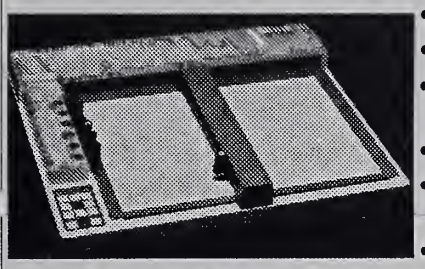
$1150.00

20Mb Tape Back-up System

- 20Mb High Speed Streamer Back-up Tape
- Qic-D2 Type • Back-up File by File or Image
- Conventional Size Digital Cassette
- Tape Back-up Controller and Software Included
- Menu Driven
- One Year Warranty

$995.00

TAXAN 710S AUTOMATIC PLOTTER



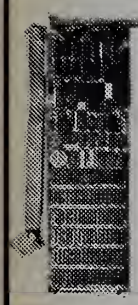
- Maximum Pen Speed 10 inches/sec in axial direction
- 6 Automatic Pen Changing
- 6 Color Fiber Pens Provided (also uses most types of ceramic pens)
- 100% HP-GL Command Compatible
- 100% Pin Compatible Serial Port with HP-7475 Plotter
- Uses up to 11"x17" Paper

$795.00

IBM-AT Case ★ IBM-AT Compatible Motherboard ★ IBM-AT Power Supply

Call American Digital Discount Association for More Information and Prices

SUPER 384 Multifunction Card



- Parallel Port & Serial Port
- Memory Expansion from OK to 3B4K (see below)
- Battery Back-up Clock
- Game Port • RAM Disk
- Spooler (Print)

$179.00

w/384K FREE Memory

DISK PLUS I/O

- One Card Consists of: Floppy Drive Controller Parallel & Serial Ports
- Consumes Only One Slot of Your IBM PC/XT or Compatible Computer

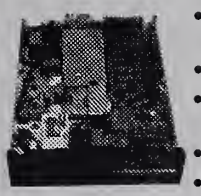
$129.00

HARD DISK CONTROLLER

- Hard Disk Controller for 5, 10, 20 and 33 Meg Hard Disks
- IBM PC/XT Hard Disk Controller Compatible

$199.00

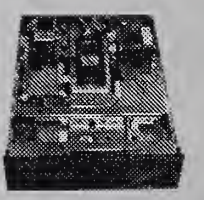
½ HEIGHT - 360K DRIVE For PC/AT



- Includes Bracket to Fit PC/AT
- Grey Face Panel
- 360K Formatted DS/DD Drive
- Highly Reliable
- IBM PC/AT Comp.

$119.00

TEAC FLOPPY DRIVE



- 360K Formatted DS/DD Drive
- IBM PC/XT Compatible
- Half Height

$89.00

ADDA MODEM

Hayas Compatible with Software

Compatibility:	Bell 103 & 212A
Spaed:	0-300 & 1200 BPS
Duplex Moda:	Full or Half Duplex
Busy Radial:	Auto Busy Redial
Data Format:	7 or 8 Bit ASCII
Parity Fmt:	Even, Odd or None
Port Adapt:	Com 1 or Com 2
Internal	$179.00
External	$199.00

TAXAN 555

- Ultra High Resolution for Color/Graphics
- BDB Compatible
- Resolution for Color Text (720 x 400)
- Resolution for Graphics (640 x 200)
- Use with Taxan 440

$275.00

TAXAN 440

- 12" CRT with .31mm Dot Pitch
- Ultra High 720 x 400 Line Resolution
- Includes Cable

$495.00

TAXAN 620

- Taxan High Quality • Green & Amber Switchable
- 12" Dot in Line 640 x 262 (H x V)
- RGB Input TTL Positive
- Includes Cable

$395.00

TAXAN 121

- 12" Clear Green/Amber Monochrome Screen
- TTL Input
- Includes Cables

$135.00

SUPER COLOR/ PRINTER CARD

- Everything IBM Color Card has, and more.
- Two Graphics Modes:
  - 4 Color - 320 x 200
  - 1 Color - 640 x 200

$99.00

Monochrome Graphic Card/ Printer Adaptor

- Fully Compatible with IBM PC Monochrome/Printer Adaptor
- Good for IBM Mono Monitor
- Printer Port can be Configured for Centronics
- Hercules Compatible

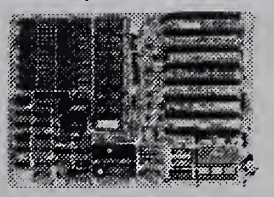
$159.00

135 WATT POWER SUPPLY

- High Speed Fan • Hard Disk Ready
- Same Dimension as IBM PC/XT Power Supply

$89.00

SUPER PC/XT Mother Board



- With 256K On Board, Assembled and Tested
- 8 IBM Compatible Expansion Slots Built In

$325.00

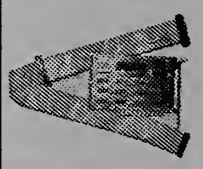
ACCESSORIES FOR IBM PC & COMPATIBLES

4164 Fast RAM Chips (9 ⁵ 64K)	Special $ .99
2764-25 EPROM Chips, each	4.00
INTEL 8087 Math Coprocessor	125.00
Serial Card Interface	69.00
Parallel Card Interface	49.00
Persyst BOB Board	375.00
Taxan 115 Green Monoitor (Composite)	109.00
Taxan 116 Amber Monitor (Composite)	119.00
Taxan 122 Amber Monitor	139.00
Taxan 420 RGB Color Monitor	359.00
Taxan 425 RGB w/Built in Green Switch	369.00
Taxan TV Tuner (Composite)	79.00
PC Mouse	CALL
Panasonic 1092 Printer (180cps)	CALL
Panasonic 132 Column Printer	CALL
EPSDN FX-85 Printer	385.00
DYNAX DX-15 Printer	395.00
Printer Stand for 80 Column	25.00
Keyboard Extension Cord	10.00
Printer Cable	15.00

THE STEEL CASE ENCLOSURE

Only **$79**

SUPER FLOPPY DRIVE CONTROL



- IBM PC Compatible Drive Controller
- Supports up to four floppy drives

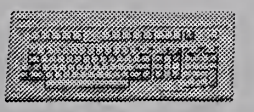
$59.00

THE KEYBOARD

IBM PC/XT Compatible

$99

ADDA 5151 KEYBOARD



Only **$99**

- Highly Reliable & Sensible Keyboard w/Cap & Num Indicator. Keytronic KB5151 Look-A-Like.

Prompt delivery, usually shipment within 48 hours (except personal check orders). 25% deposit required for C.O.D. orders.
We welcome major educational institutions and PC users' groups to establish open accounts (P/O) status with us to facilitate shipment of orders. Write or call for details.

Prices quoted above do not include UPS shipment charges.
Prices subject to change without notice.
California residents add 6.5% sales tax.

Business hours: Mon.-Sat. 8:30am - 5:30pm

IBM PC is a registered trade mark of IBM Corp.

TAXAN is a registered trade mark of TAXAN Corp.

AMERICAN DIGITAL DISCOUNT ASSOCIATION, INC.

4040 SPENCER STREET, SUITE M
TORRANCE, CALIFORNIA 90503
TELEPHONE: (213) 542-3578

APPLICATION SOFTWARE CONSULTING SERVICE AVAILABLE

As The Apple Turns

New Products, Plus: See You In Court, Steve...

More Memory Better Printer New Monitors Bigger Lawsuits

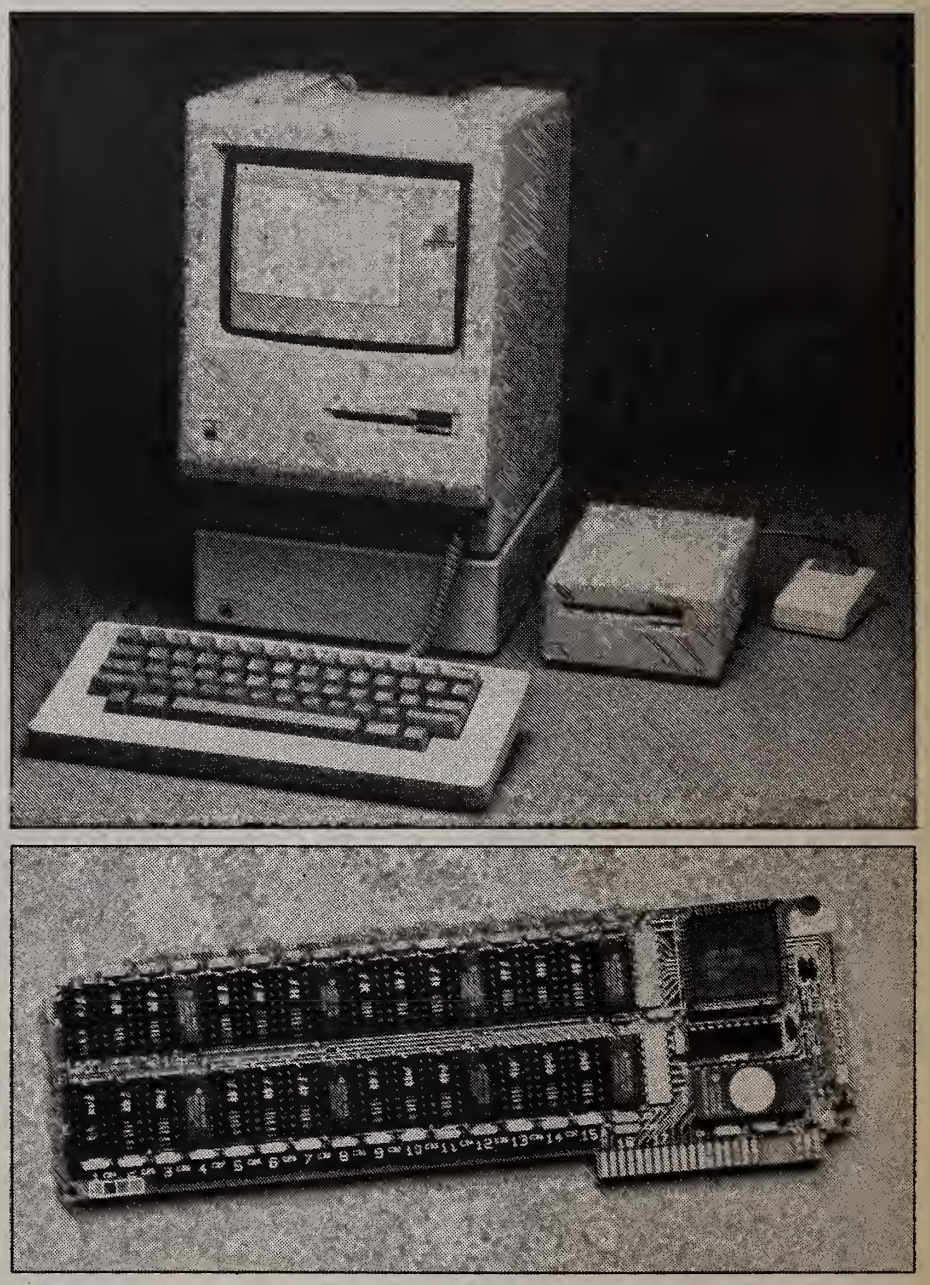
The eyes of the world have certainly been directed at Cupertino lately, but, doubtless to Apple Computer's chagrin, most of the hoopla has been less concerned with the company's long-awaited new products than with its ongoing dispute with departed chairman Steve Jobs.

On September 17, Apple announced a host of new products for the Apple II and Macintosh lines. In response to user demand (to say nothing of the independent efforts of third-party developers), the company introduced the Apple II Memory Expansion Card, which expands the internal memory of Apple II, II+ and IIe computers in 256K increments to a total of over one megabyte. At the same time, Apple announced the UniDisk 3.5, a 3½" double-sided disk drive which is capable of storing 800K of data, more than five times the current capacity of Apple 5¼" floppy drives. UniDisk is currently available from authorized Apple dealers for a suggested retail of $499; a separate accessory kit, including the interface card for II, II+ and IIe computers, is available for $69. No release date or price was given for the expansion card; Apple announced its impending arrival so that software developers can take its features into account. Apple also announced new composite color monitors for the IIe and IIc.

At the same time, the company announced several products to strengthen the Macintosh's position in the business computer market. Probably the most significant new item is the Hard Disk 20, an external 3½" Winchester hard disk drive that connects to the Mac's disk drive port and is designed to fit easily under the computer. Since it gives the Mac 20 megabytes of storage capacity, the Hard Disk 20 is expected to enhance the computer's status as a powerful business machine; it's scheduled for November release at a suggested retail of $1499, with quantity shipments expected in early 1986. Other new products are the Switcher utility, which allows users to combine up to eight applications (depending on available memory) and instantly switch among them, and the ImageWriter II, compatible with all Apple II and Mac machines, with three print modes including near-letter-quality, the ability to print in six colors and black, and increased speed. The printer is currently available, as is the new Apple Personal Modem (again, for Apple II and Macintosh), which operates at either 300 or 1200 baud, plugs into a wall outlet and is compatible with most communications software.

Alas, however, the media excitement over the new products was somewhat overshadowed by daily rashes of speculation, innuendo and mud-slinging concerning the company's troubled relations with deposed co-founder Steve Jobs. Jobs, who was effectively ousted from power several months ago, submitted his resignation from Apple, at the same time announcing his intention of forming a new company to create, among other things, a Unix-based desktop computer, and likewise his plan to take five Apple employees, including engineer Richard A. Page, with him.

Apple, in turn, filed suit against Jobs in Santa Clara County Superior Court on September 23. According to the company's press release, Jobs and Page had breached their fiduciary responsibilities to Apple by violating agreements, signed as a condition of their employment, "not to use confidential or proprietary information of Apple for the benefit of any competing enterprise or in any way contrary to the best interests of Apple." Not only did both men have access to confidential and proprietary information regarding Apple's business strategies and product development, the suit maintains, but Jobs is alleged to have deliberately deceived the board of directors by secretly making plans for the new company while still serving as Apple's Chairman of the Board.



New products announced by Apple include memory enhancement products for both Macintosh and Apple II. The Hard Drive 20 fits under the Macintosh and gives it 20 megabytes of memory; the Memory Enhancement Card for the Apple II increases the machine's memory in increments of 256K to a capacity of over 1 meg.

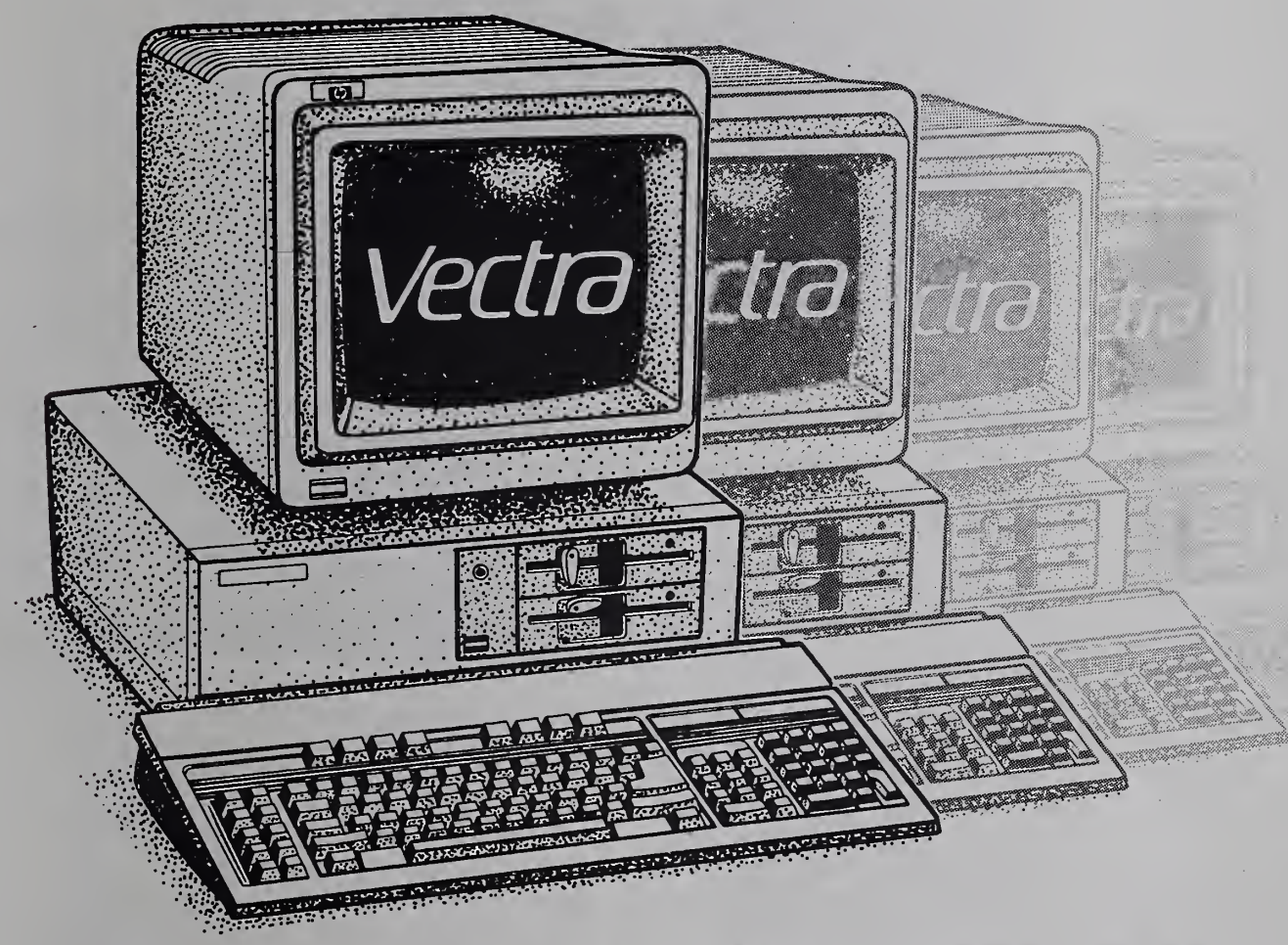
The suit seeks to prohibit the defendants from using any of Apple's confidential or proprietary information, and from recruiting Apple employees or ex-employees as a means of getting such information. Monetary damages are also being sought, and no immediate resolution seems likely.

As an irreverent postscript to all this, Software 1st, a Marin company specializing in Franklin computers (an Apple II clone whose manufacturer, cognoscenti may recall, has had its share of disputes with Apple over proprietary information and products), has announced the formation of The Jobs Board, 300 baud, at (415) 459-1544, to deal with issues like "What will he do next? Movies? Politics? Does he really use that video disk player?"

So, for the latest scurrilous trivia, call The Jobs Board. For the latest in new products from Apple, consult your local dealer or user group for information.

— Mary Eisenhart

"The next best thing to knowing about something is knowing where to find it"



HERE IT IS! THE VECTRA PC FROM HEWLETT PACKARD
THE COMPATIBLE, YET TAILORED PERSONAL COMPUTER AS VERSATILE AS BUSINESS ITSELF

It's more powerful than the IBM PC/AT, running the identical popular programs up to 30% faster. It's easier to use, has a better keyboard, looks more attractive, and even takes up 30% less space on your desk.

AS FLEXIBLE AS YOU NEED IT TO BE

You'll have plenty of choices when it comes to software. The Vectra PC is designed to run any off the shelf application software the IBM PC/AT can. So you can choose from among the most popular programs for word processing, business graphics, spreadsheet analysis, data base management and communications.

AS SOPHISTICATED AS YOU NEED IT TO BE

It's not only easy to use, it's easy to look at. Monitors tilt and swivel. And accessory cards give you excellent, crisp text along with color graphics if you choose a color monitor.

AS POWERFUL AS YOU NEED IT TO BE

The Vectra Personal Computer starts you out with all the performance you need, and lets you add more later. BUY WHAT YOU NEED NOW, AND ADD WHAT YOU NEED WHEN YOU NEED IT. BELIEVE IT OR NOT, WE'VE ONLY BEGUN TO DESCRIBE THE VERSATILITY OF THE VECTRA PC. COME INTO THE STORE AND DISCOVER THE REST...

Full line of H-P products
• Personal Computers • Printers • Plotters • Scientific/Business Calculators

Authorized H-P Service Center
We provide answers to your questions and solutions to your problems.

DAV-TECH COMPUTER CENTER

(213) 463-3001

d-t

Disk Drive Your New Chevy

This may be the first example of the interactive electronic advertising brochure. Someone at General Motors (a corporation that had its last new idea circa 1923) finally realized how many Apple personal computers are out there in American homes.

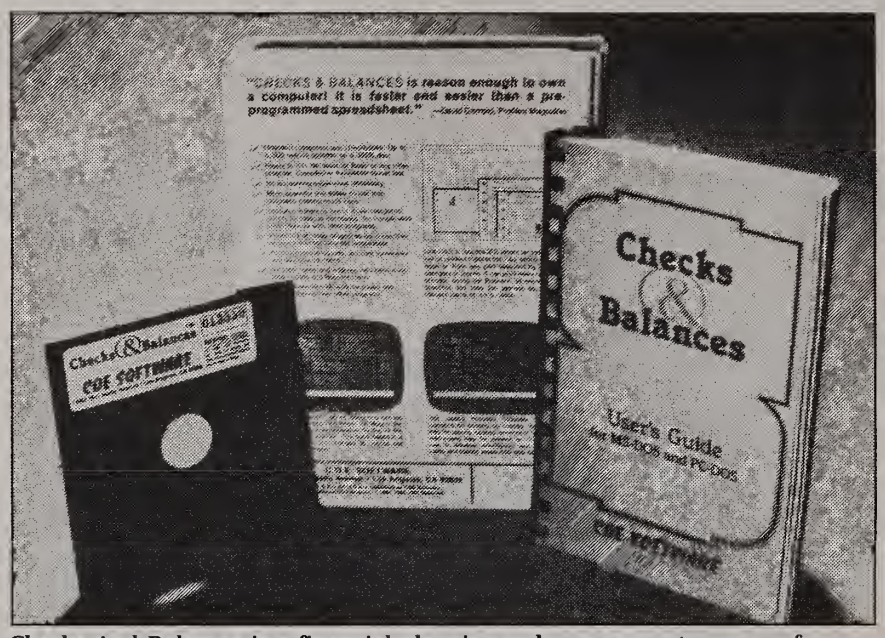
So they brought us Chevy Tech. As the disk boots up we see a high-res graphic of a Camaro and hear a little merry tune. This is the last creative programming we will get in this item. The text is all 40 column upper-case, to accommodate even the most basic Apple II, and the program is constantly going back to read bits and pieces from the disk, advising you that it is "COLLECTING INFORMATION — PLEASE WAIT." The program is menu-driven, and traps errors nicely. It is not copy-protected, but an accompanying leaflet takes three paragraphs of legalese to tell the prospective pirate that DOS 3.3 belongs to Apple Computer, Inc. in no uncertain terms.

"Without leaving your home, the Vehicle Selector Program allows you to 'build' popular Chevrolet car and truck models to your own specifications, including options, and arrive at a total price...," explains the accompanying letter from Mr. Thomas A. Staudt, the General Marketing Manager. You can have anything you want, as long as it is a Camaro, Cavalier, Celebrity, Blazer or S-10 pickup. Manufacturer's Suggested Retail Prices are current as of January, 1985. I was truly amazed at how much it is possible to spend on options, when all you have to do to pile more stuff on your wagon is to make a few keystrokes. The program is set up to print out your choices on any Epson printer (you can alter the code yourself to accommodate other printers). The BASIC program is not set up, however, to reject stupid choices, such as incompatible options or duplications, so you can create some automotive monstrosities.

A very simplified finance calculator, similar to that in many home accounting packages, allows you to compute payments based on any interest rate you input. Another option allows you to estimate the cost of ownership compared to your present wheels, to "try out" various economies, and to maintain a service cost record. At worst, you get a free diskette out of this deal. It represents a first crude effort at advertising through the home computer. As hardware, software and the mind of the marketing manager grow more sophisticated, we can expect to see more of this. (Disk available from Chevy Tech, P.O. Box 500, Troy, MI 48007-0500.)

— *Mike Markowitz*

PC FAIRE PRODUCT INTRODUCTIONS



Checks And Balances is a financial planning and management program for the home and small business

***Checks And Balances* by CDE Software**

The makers of *COMPAT* and *MITE* introduced a new version of their home/small business financial planner/manager program for under $75. The commands are in English with no menus; on-screen space is allotted to make the check register look like your own checkbook record. The check register scrolls, or pages, just like your checkbook, too. *Checks And Balances* includes on-screen editing, which its publishers say works just like a word processor. It is available for MS-DOS, PC-DOS and CP/M computers. (CDE Software, 2463 McCready St., Los Angeles, CA 90039, (213) 661-2031.)

***PathMinder* by Westlake Data Corporation**

A small company in Texas has introduced a "visual shell" for DOS, essentially a multiple choice library utility with menus that organize your disk directories into a rational tabular form. The program also allows you to direct operations with simple (non-cryptic, in their words) commands. It is among the many programs now available for under $100. Apparently this Texas firm is run by an eclectic group (self-described as a Jew, a Baptist, a Catholic and an agnostic) who get together on Saturdays for non-business discussions, and they were impressed by Willie Nelson's contribution to hunger in Africa. The Westlake software offering was made with the proviso that purchases during Sept./Oct. will have a third of the purchase price given to the USA FOR AFRICA group (Westlake Data Corp., P.O. Box 1711, Austin, TX 78767, (512) 339-8400).

***Media Master Plus* For PC-DOS From Intersecting Concepts**

The popular disk-to-disk translator program now has an enhanced version for PC-DOS devices. Now you can translate your ASCII files from a large number of CP/M devices to be read by your IBM or compatible, for under $60. The added attraction is that this package includes a Z80 emulator program called ZP/EM that runs CP/M software on your PC-DOS device! You can select Osborne, Kaypro or Zenith terminal emulation, at an effective speed of one to two MHz for hardware-independent programs. (Intersecting Concepts, 4573 Heatherglen Ct., Moorpark, CA 93021, (805) 529-5073.)

Visionary 1200XT Modem From Visionary Electronics Inc.

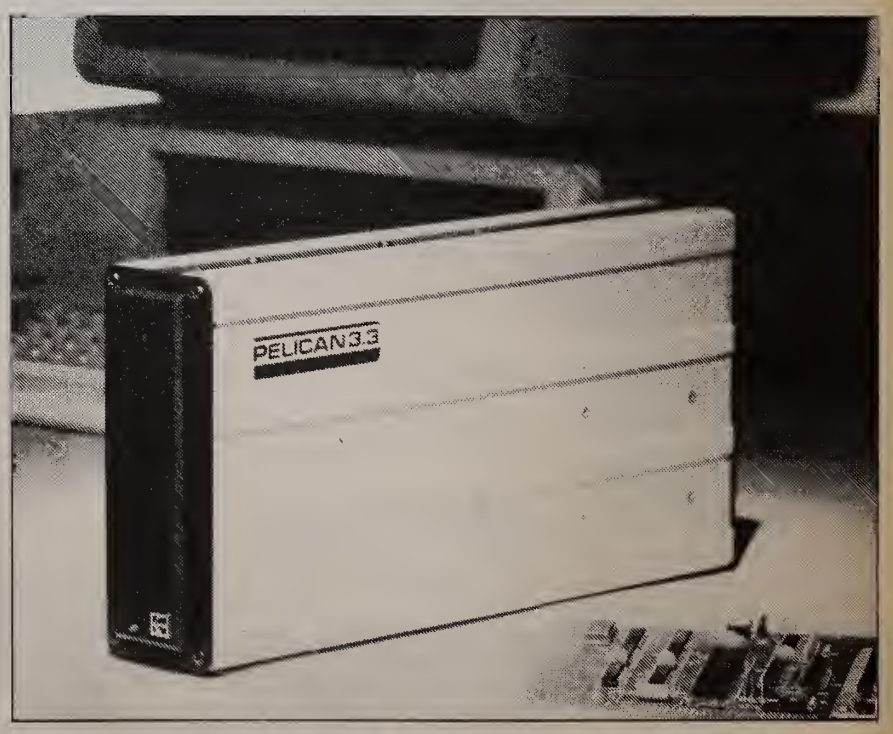
This new buffered modem has enhancements based on inclusion of a battery to allow independent operation. It has its own internal clock/calendar and up to 48K of active memory for sending, receiving or storing messages. The onboard software gives the 300/1200 bps modem the capability of sending or receiving messages automatically with the host computer turned off. (Visionary Electronics, 141 Parker Ave., San Francisco, CA 94118, (415) 751-8811.)

Mercury 1200 By Mercury Modems

The simple modem has arrived, with one light and two switches. A new non-Motorola chip design allows simplification of the smart modem, while maintaining Hayes software compatibility. Documentation is readable, even understandable. Operating automatically at 300 or 1200 bps, this smart modem puts on-screen messages about status in plain English. (Check with local dealers for availability.)

Pelican 3.3 from Pacific Micro Systems Inc.

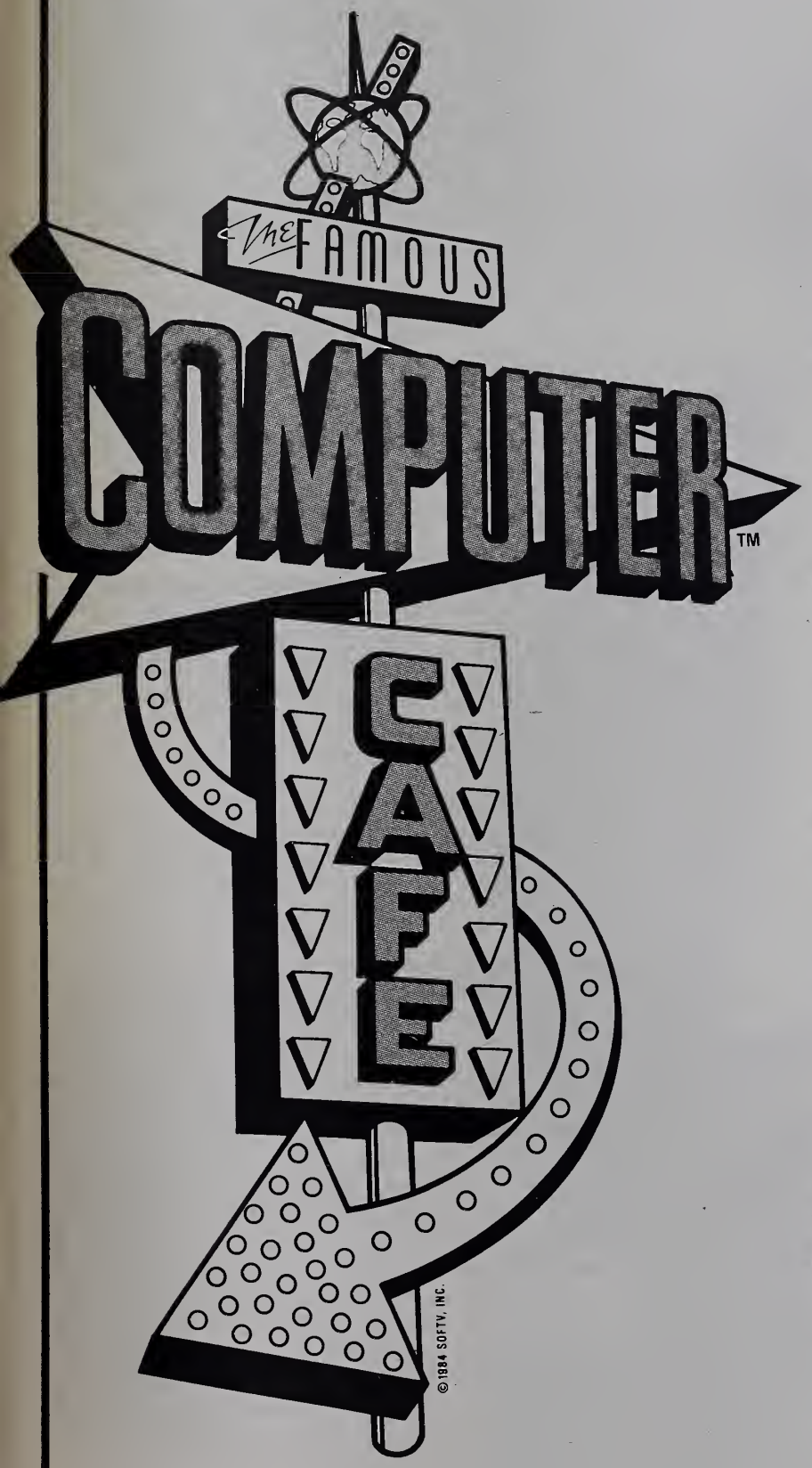
This IBM PC peripheral uses a Kodak half-height drive in an aluminum housing to attach a 3.3 Mbyte floppy disk storage unit externally. The 5¼" high density diskettes will store 2.75 Mbytes of formatted data. (Pacific Micro Systems, 160 Gate Five Rd., Sausalito, CA 94127, (415) 331-2525.) — *Robert D. Athey Jr.*



The Pelican 3.3 is a 3.3 megabyte external floppy disk storage unit for IBM PCs and compatibles.

Now Serving at THE FAMOUS COMPUTER CAFÉ

Personal Computer Talk Radio . . .



IN SAN FRANCISCO
KXLR 1260 AM Mon-Fri 9:30 PM
IN LOS ANGELES
KIEV 870 AM Mon-Fri 3:30 PM
KFOX 93.5 FM Mon-Fri 7:30 AM, 6:00 PM
Doctor Disk Thursday Nights, 8-10 PM

VISITORS TO THE FAMOUS COMPUTER CAFE

Christopher Cerf (author)...**Ray Bradbury** (author)...**John Reese** (Tronix/Monogram)...**Trip Hawkins** (Electronic Arts)...**Carey Lu** (High Technology)...**Gene Roddenberry** (Star Trek)...**Fred L. Ignazio** (New Tech Times)...**Edwin Moses** (Olympic gold medalist)...**Herbie Hancock** (jazz musician)...**Robert Moog** (Kurzweil)...**Bill Gates** (Microsoft)...**Jack Tramiel** (Atari)...**Don Estridge** (IBM Entry Systems Division)...**Bill Bowman** (Spinnaker)...**Ed Auer** (CBS Software)...**Frank Schwartz** (Simon and Schuster)...**Doug Adams** (*Hitchhiker's Guide to the Galaxy*)...**Peter McWilliams** (*Personal Computers and the Disabled*)...**John Dvorak** (Infoworld)...**Jim Zuber** (Blue Chip Software)...**Dr. Timothy Leary** (software author)...**Jack Anderson** (syndicated columnist)...**Jen Davidson** (Davidson and Associates)...**Stewart Brand** (Whole Earth Software Review)...**Stewart Alsop** (P.C.Letter)...**Steven Levy** (*Hackers*)...**Paul and Sarah Edwards** (Working From Home)...**Mark Cantor** (Macromind)...**James Cavuoto** (Lasers and Applications)...**Joe Billings** (Sight and Sound)...**Sa Tara Singh Khalsa** (Kriya)...**Adam Chowaniac** (Commodore)...**Bruce Davis** (Imagic)...**Jeff Rona** (Roland)...**Larry Saltzman** (Assoc. of Entertainment Ind. Computer Professionals)...**Michael Tomczyck** (*Home Computer Wars*)...**Mark Brownstein** (author)...**Chet Pipkin** (Belkin Components)...**Richard and Ron Grant** (Auricle, Emmy winners)...**Bobby Kolick** (Arktronics)...**Charles Humphrey** (Computer and Software News)...**Charlie Kellner** (Lucasfilm)...**Bill Atkinson** (Apple Computers)...**Dr. Alfred Bork** (UC Irvine, Educational Technology)...**Ira Wolfman and Pat Berry** (Enter Magazine/Childrens Television Workshop)...**Ed Thompson** (Harcourt, Brace, Jovanovich)...**Boyd Pearce** (Data General)...**Barbara Elman** (*Word Processing News*)...**Ron Staley** (Computer Aids for the Disabled)...**Bert Gader and Manny Nedar** (Hillhouse)...**Bert Rhoades** (PC World)...**Larry Magid** ("The Computer File," L.A. Times)...**Den Kunz** (Commodore/Young Astronauts Council)...**John Williams** (Sierra)...**Kevin Blaker** (Long Beach Micro)...**Chuck Spears and Ira Belsky** (Spear Securities Inc.)...**Mike Wallace** (The Learning Company)...**Bob Botch** (Epyx)...**Claudia Cohl** (Family Computing)...**Jim Johnson** (Human Edge Software)...**R.J. Mical** (Commodore Amiga)...**Rick Greinick** (Neosoft)...**Craig Nelson** (Epyx)...**Steve Dilles** (*The Digital Deli*)...**Dave Fradin** (First Byte Software)...**John Shirley** (Microsoft)...**Steve Burakoff** (Layered, Inc.)...**Gordon Nacarrato** (Gordon and Grimsley's, Aspen, CO)...**Larry McGovern** (Serviceland)...**Richard Sandze** (Newsweek)...**Steve Roberts** (USA Today)...**Peter Huber** (Personal Computer Support)...**Andrew Rev** (Echo)...**Randy Battat** (Apple Computers)...**David Larson** (Apple Computers)...**Fred Gladney** (C.W. Gladney and Associates)...**Jeff Garbers** (Microstuff)...**Roger Mess** (Software Supermarket)...**Jerry Schwartz** (Computers for the Blind)...**Bud Grove** (Apple Users Group)...**Rawson Stovall** (New Tech Times)...**Brent Seltzer** (Compututor)...**David Cole** (Ziff Davis)...**Steve Axelrod** (The Axelrod Agency)...**Martin Schmitt and Kai Krauss** (DDD Software)...**Charlie Kreitzberg** (Cognetics Corporation)...**Sheldon Adelson** (The Interface Group)...**Kai Nishi** (Microsoft)...**Al Vezza** (Infocom)...**Merritt Lutz** (Informatics)...**Rich Lionetti** (Micro D)...**Bill Stapin** (Computer Merchandising)...**Amy O'Brien** (The New Literacy)...**Kit Galloway and Sheri Rabinowitz** (The Electronic Cafe)...**Bob Leff and David Wagman** (Softsel)...**Dr. Robert Reitman** (Psycomp)...**Ron Posner** (Ashton Tate)...**Stewart Bloom** (Datasoft)...**Peter Quinn** (Apple Computers)...**Amy Schnepper** (Springboard)...**Nelini Kouwenhoven** (Show Biz Expo)...**Larry Miller** (PCMA)...**Jack Barton** (Computerland)...**Cynthia Mason** (Seidin and Associates)...**Michael Brinds** (New Horizons Computer Learning Center)...**Carol Dysart** (Computer Resources)...**Ron Kaplan** (Zebrack, Levine and Mepos)...**Brian Kadison** (Arthur Anderson)...**Andrew Tobias** (MECA software author)...**Jay Howard and Steve Arthur** (PDS Sports)...**Ron Gunning** (Omnilogic)...**Carl Evans** (Verven)...**Michael Kalin** (Software Toolworks)...**Andreas Langenscheidt** (Langenscheidt)...**Cliff and Doug Mitchell** (Bits and Bytes)...**Arnie Uretsky** (The Learning Lab)...**Farley Malorrus** (computer astrologist)...**Bob Glaser** (Microsoft)...**Bill McGee** (Microsoft)...**the Honorable Rick Brown** (Santa Barbara Municipal Court)...**Steve Roth** (author)...**Steve Beck** (Beck Tech)...**Eddie Goldfarb** (Eddie Goldfarb Associates)...**Sheila Kinney** (Henson Associates)...**James Copland** (Atari)...**Bruce Krogsted** (MCI)...**Randy Cade** (Epson West)...**Michael Mock and Chris McDivitt** (Indus Systems)...**David Em** (computer artist)...**Christopher Miles** (Crystal Network)...**Joel Berez** (Infocom)...**Jan Kugel** (Seiko)...**Robert Wood** (author)...**James Levy** (Activision)...**Phoebe Koben** (New York Magazine)...**Sid Meyer** (Micropro)...**George Deli** (Wico)...**Dennis Caswell** (Epyx)...**Fernando Flores** (Hermanet)...**Doug Carr** (Video Magazine)...**Rod Firestone** (Musician)...**Benjamin Krepack** (Journalist)...**Bob Foster** (Telos Software)...**Bill Salkin** (ABC Computing)...**Ralph Weinger** (Color Systems Technology)...**Jay Teitzell** (Animator, Digitizing)...**Chuck Braverman** (Director, Producer)...**Raymond Marks** (MCI Mail)...**Ron Barker** (Montage Computers)...**Donny Osmond** (Entertainer)...**Dorothea Atwater** (Author)...**Marc Schoenberg** (Computer Dating)...**Roy Nierenberg** (*The Art of Negotiation*)...**Judith Kubner** (NCII)...**Fred Brown** (*The Brown Book*)...**George Morrow** (Morrow Designs)...**Peggy Glen** (Aames & Allen)...**Valerie Hood** (Consultant)...**Kim Schuette** (*The Book Of Adventure Games*)...**Fred Blechman** (Sanyo User Group)...**Terry Myers,** (Quarterdeck Office Systems)...**Les Crane** (Software Golden Oldies)...**Steve Beck** (Beck-Tech)...**Bob Claster** (software author)...**Dave Whitby** (GRID Systems)...**Michael Reinhold** (Mirage Systems, Inc.)...**Dave Grenewetzki and Scott Harrison** (Spectre Technologies)...**Denise Turnipseed** (Computer Action)...**Sherwin Steffin** (Brainpower, Inc.)...**Tom Rettig** (DBASE Consultant)...**Ray Hege** (architect)...**Tom Paton**...(*Charged Bodies*)...**Tom Tucker** (Bulletin Boards)...**Bette Laswell** (BDL Enterprises)...**James Canger** (Cadet Charters, Inc.)...**Phil Becker** (Breadboard System)...**Mike Davies** (vertical marketing)...**Steve Cartwright** (Activision)...**Marc Mann** (musician)...**Gwen Moore** (California Assemblywoman)...**Jeff Fogel** (Director of New Jersey A.C.L.U.)...**Jean Hollands** (*The Silicon Syndrome*)...**Steve Luckett** (Radio Shack)...**Shel Talmy** (QuickScan)...**Brian Deagon** (L.A. Business Journal)...**Jim Moise** (Market Share)...**Dr. Saul Miller** (nutrition for high-tech minds)...**Dennis Erokan** (MicroTimes)...**Todd Mozer** (Electronic Speech Systems)...**John Schneider** (Software Locator)...**Bill Thurman** (Thurman Marketing Services)...**Francis Lambert** (Lok Lite)...**Bob Bakva** (Advanced Translation Technology)...**John Seeger** (Cirvis Inc.)...**John Purner**...(AST Research Inc.)...**Bob Williams** (M.I.S.)...**Charlie Baird** (Lutsky Baird Associates)...**Robert Greenberg** (Institute for Artificial Intelligence)...**Van Wolverton** (*Running MS/DOS*)...**Ed Kahn and Charles Seiter** (*The Skeptical Consumer's Guide to Used Computers*)...**Todd Bernstein** (Corporate Telecomm)...**Dale Sinor** (Executive Systems Inc.)...**Julie Van Duyn** (*The Human Factor in Computer Crime*)...**Marc Graybill** (Interacting Concepts)...**Steve Chernicoff** (*Macintosh Revealed*) Michael Reinhold (Mirage Systems, Inc.)...Dave Grenewetzki and Scott Harrison (Spectre Technologies)...Denise Turnipseed (Computer Action)...Sherwin Steffin (Brainpower, Inc.)...Tom Rettig (DBASE Consultant)...Ray Hege (architect)...Tom Paton...(*Charged Bodies*)...Tom Tucker (Bulletin Boards)...Bette Laswell (BDL Enterprises)...James Canger (Cadet Charters, Inc.)...Phil Becker (Breadboard System)...Mike Davies (vertical marketing)...Steve Cartwright (Activision)...Marc Mann (musician)...Gwen Moore (California Assemblywoman)...Jeff Fogel (Director of New Jersey A.C.L.U.)...Jean Hollands (*The Silicon Syndrome*)...

MEGAHAUS:

Small Company, Mega-Success

PHOTO: ANN SUMMA

Paul Stannard (l) and Paul La Costa of Megahaus attribute a good portion of their company's success to the decision to concentrate on the Apple II and Macintosh software market.

When most people think of a computer company, they tend to think of giant computer firms like IBM, DEC, or Apple; images of thousands of employees and massive, gleaming buildings in Silicon Valley support these thoughts. Yet not all of the companies in the computer industry fit these mighty images. More often than not, some of the most innovative and technologically advanced firms, both hardware and software producers, are small, more compact firms that make up the sometimes nebulous world of the "Third Party Vendors." From these third party vendors come many of the products and ideas that eventually become standards in our industry. In fact most of the giants of the computer industry, names like Microsoft, Lotus, and Ashton-Tate, started as, and still are to a degree, third party vendors. How they differ from their larger corporate brothers could take up a book. Suffice it to say that there are two major differences of note that are of interest to us. They are smaller by several orders of magnitude, and, as a result of this lack of size, they are still small enough that truly new and innovative ideas can still make themselves known within their sometimes cramped office spaces.

Such a company is Megahaus. They are not big: they have less than 40 employees, and they are housed in a small bank of offices in an industrial park. They are not even located in Silicon Valley or, for that matter, Northern California — one of San Diego's Sorrento Valley industrial parks is their home. Nevertheless, this tiny company is one to sit up and take notice of. The reasons are simple: results. Currently, Megahaus has more software packages for the Macintosh, four, than any other third-party software vendor. In addition, they also have a runaway bestseller for the Apple II, *Megaworks*, their add-on package for *Appleworks*. As this article is going to press, they are announcing their newest Appleworks add-on product, *Reportworks*. And more packages for the Apple II and the Macintosh are already on the way. Clearly, for Megahaus, these are the best of times.

It was not always that way though. Just two years ago, they were facing a serious crisis, their product line was being squeezed by increasing competition and a severe lack of visibility in the marketplace. Quite simply, they did not have a unique or special prod-

San Diego-based Megahaus has 35 employees. They expect to do $5,000,000 in business this year.

By John D. Gresham

SOFTWARE ENTREPRENEURS '85

uct, or line of products. Just two years later, they now have *two* such product lines for the Macintosh and the Apple II. How they did it is one of the subjects that is explored in the interviews that follow. But there is more here than just a small company finding its market niche. For what we have here is a prime example of the flexibility and power of third-party vendors. Consider that Megahaus has only 35 employees and is currently doing business at a five million dollars per year pace.

Paul La Costa, who co-founded Megahaus with Paul Stannard in 1983, talks candidly about Megahaus' early problems, and his feelings about the industry and his competitors, in particular about the ethics and moralities of the quickly growing and evolving microcomputer business.

What were the first products that you put out when the company started?

We organized the company in January of 1983 and put our first product on the market, a $59.95 word processor called *Megawriter*, in June of 1983. What we have learned since then, and what we believe, is that you cannot sell microcomputer software through retail stores and distributors for less than $125.00. We had a series of programs that were in the $59.95 to $99.95 range, and we found that you just couldn't support that kind of software and sell it in the kind of quantities required to make a profit.

Why?

You just can't afford to market software in that price range, in the numbers per product being sold today, and provide anything approaching the required level of after-sale support required by the customer. This lesson is what we learned as a result of our early software offerings into the market. Early on, we had products on the IBM PC/XT, the IBM PCjr, and Apple II. And then *Appleworks* came out, and that really bit into the sales of our Apple II products like *Megawriter*, *Megasell*, and *Megafinder*. More importantly than that though, we felt that we were in the wrong price range. So, the combination of those two things forced us to shift gears. About the same time as this was happening, the Macintosh was announced and we managed to become one of the original "seeded" developers for Macintosh software.

What did that involve?

"Seeded" means that we were chosen to be among the initial group of third-party software houses that received Macintosh software development systems and documentation. In addition, Apple also supplied us with all the marketing and technical support that we required to get aboard with the system. This was an excellent move on Apple's part, if I do say so myself. This is because, other than Microsoft and Apple, Megahaus was the first software company out with a Macintosh product, *Megamerge*. This was back in April of 1984.

Since then we have been extensively involved with Apple in a number of different promotions and products. Most recently, we were involved in Apple's rollout of new products for the Macintosh. We visited 26 cities in just five days, showing their dealers all of the new goodies like the laser printer and the Macintosh office. We were one of only four software houses invited along to show off our products alongside of the Apple-developed products. When you are in the company of people like Microsoft, Peachtree, and Lotus, you are doing *quite* well. We've been in Apple's booth at numerous trade shows. On the whole, we work very closely with Apple.

You currently have one of the largest lines of third-party software for the Macintosh. Could you give us a perspective on the early days of your Macintosh software development?

I think that one of the things about the Macintosh that was most interesting was that when we started we were getting new updates and documentation from Apple every day. Even before that, just to begin, you had to read through thousands and thousands of pages of documentation. I think that this is one of the big reasons that it took the manufacturers so long to get their various software packages out on the market. One of the reasons that we were one of the first to get out on the market was that our programmer's background was in PASCAL. Since the Macintosh operating system is based around PASCAL, I think that this put us at an advantage as compared to our competitors. Many people spent their time "brushing up" on PASCAL just to be able to understand the Macintosh operating environment, and it took six to eight months for them just to be able to write their *first* packages. By that time, we already had two out on the market.

So the stories about the Macintosh programming manual being as thick as the Manhattan phone book and printed on the same kind of tissue paper are true?

Yes, only many times over! In addition, we had updates and replacement pages coming in *daily* from Apple when we were just getting started.

From a design standpoint, do your programmers *like* working in the Macintosh operating environment?

Our president, Paul Stannard, not only likes the Macintosh, but thinks that it's the future in our industry. And I think that there is a lot of evidence that the Macintosh user interfaces are now a standard format in the new generation of microcomputer software. For example, IBM machines and their clones now have pull-down menus and mice. I think that it's the right machine to be working with *right now*.

Why do you think you've done so well with your Macintosh packages?

I think that the number one reason for our success with the Macintosh is that we dropped any further IBM-related development programs and devoted ourselves to the Macintosh. We managed to free up a lot of programmers and time that way.

I think that if you look at most of the big players in the software industry today, they *are* IBM players. As a result, it's very tough for their programmers to shift gears when they go from doing an IBM PC development to a Macintosh project.

Our people, as I've said before, were already PASCAL oriented, and by dropping our IBM PC development programs, we have been able to really focus on getting the most out of the system. Our technical staff took a real liking to the Macintosh, so from a technical standpoint it was quite easy to get excellent results. From a marketing standpoint, the cost of entry to market a product for the Macintosh is just way below what you would have to spend for an IBM PC product. In fact, in the early days, it was more of a footrace of who could get a product out there, get an ad into *Macworld*, and get the people working in the field with Apple. If you could do that, you were established!

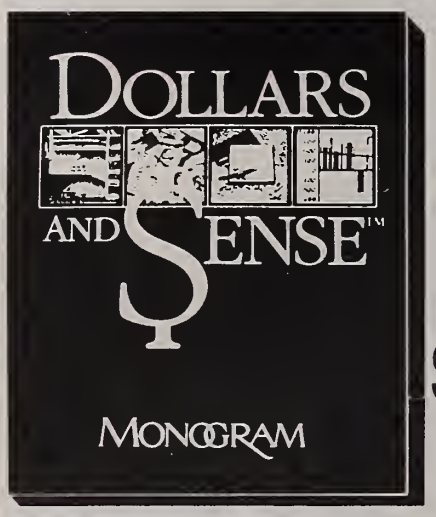
What is it like to design software for the Macintosh?

We really enjoy writing software for the Macintosh for a variety of reasons. One of the big ones is all of the help that we get from Apple. I would say that none of the other major hardware companies support, both technically and marketing-wise, their software vendors the way Apple does. They have their Macintosh college so that all of our programmers can go up and get the latest information on the system. We are in on the product plans, for both the Macintosh and the Apple II, so we know where Apple is really headed. This allows us to gauge what kinds of products we need to develop and market. On the marketing end, they help us quite a bit through their own ads, brochures, as well as commercials on TV. More important than that, though, we have access to their sales force and can train that force to push and recommend our products. That kind of promotion you just can't buy for love or money.

From a design standpoint, how is it different designing Macintosh soft-

You Asked For It! You Got It!

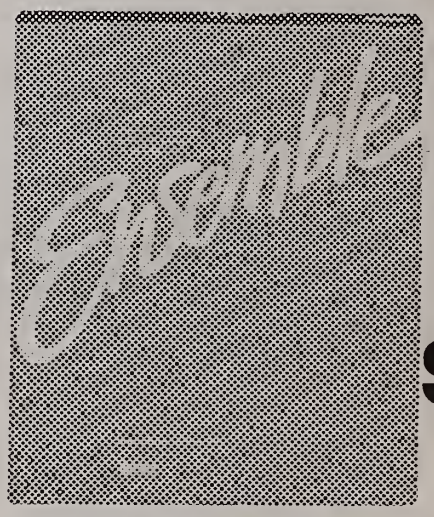
WE'VE JOINED THE MAC ATTACK!



Dollars & Sense for Macintosh can establish budgets on up to 120 accounts, make transactions automatically, and give you a complete set of reports and full-color graphs' at a keystroke.

MONOGRAM

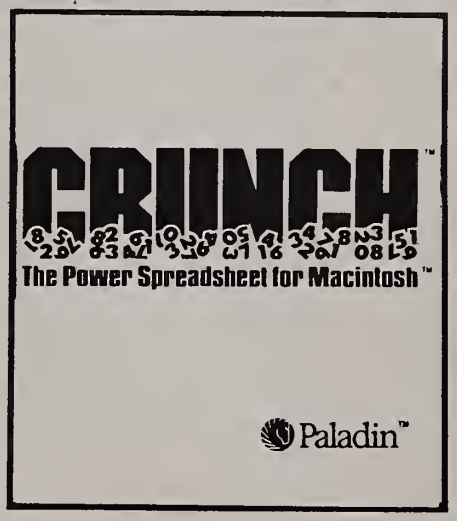
$117.00 MFRS. SUG. LIST 195.00



Ensemble is the first integrated information management system for the Macintosh, delivering all the ease-of-use, processing power, and graphics capabilities businesspeople need to excel.

HAYDEN SOFTWARE

$180.00 MFRS. SUG. LIST 300.00



In two of the most important measures of spreadsheet power, size and speed, Crunch beats all other spreadsheets. This program stores substantially more cells than Lotus 1-2-3™ and performs calculations noticeably faster.

Paladin™

$177.00 MFRS. SUG. LIST 295.00

ThinkTank is the first software program designed to process ideas. ThinkTank's flexible outline format lets you organize your thoughts, turn inspirations into strategic planning and transform marketing ideas into full-fledged proposals.

Living Videotext, Inc.

$90.00 MFRS. SUG. LIST 150.00

The ultimate music tool. "Simple enough for a beginner, powerful enough for a professional." Key features include: multiple staffs and clefs, 4-voice sound, 16 different instruments, full MAC printing, lyrics, fonts and styles and produces MIDI output.

ELECTRONIC ARTS™

$29.97 MFRS. SUG. LIST 45.95

THE WHEREHOUSE

COSTA MESA.....2320 Harbor Blvd.	MOUNTAIN VIEW.....1939 El Camino Real	SANTA BARBARA.....3307 State St.
ENCINO.....17965 Ventura Blvd.	PASADENA.....3635 E. Foothill Blvd.	STUDIO CITY.....12123 Ventura Blvd.
GRANADA HILLS.....16852 Devonshire St.	REDWOOD CITY.....1932 El Camino Real	SUNNYVALE.....1060 E. El Camino Real
LAKEWOOD.....5255 Lakewood Blvd.	SAN LORENZO.....17750 Hesperian Blvd.	TORRANCE.....17542 Hawthorne Blvd.
LOS GATOS.....15466 Los Gatos Blvd.	SAN MATEO.....1934 El Camino Real	VAN NUYS.....15232 Sherman Way

Sale limited to stock on hand. Ad items subject to prior sale.

WHEN IT COMES TO IBM SOFTWARE WE MEAN BUSINESS.

All IBM Software 40% Off Mfrs. Sugg. List Everyday!

WORK MORE EFFICIENTLY WITH MICROSOFT® WORD FOR IBM® PERSONAL COMPUTERS

- Use with the Microsoft Mouse to select text and carry out commands.
- Use on-screen character formats and page layout so you "see what you get."
- Split the screen into several horizontal and vertical windows.

$225.00 MFRS. SUG. LIST 375.00

BUILD HIGH PERFORMANCE CUSTOM SPREADSHEETS FAST WITH MICROSOFT® MULTIPLAN®

- Link separate worksheets together to keep complex projects simple.
- Pass worksheet information directly to Microsoft Chart, a complete business graphics program.
- Use English words for commands and formulas.

$117.00 MFRS. SUG. LIST 195.00

MAKE YOUR POINT GRAPHICALLY WITH MICROSOFT® CHART FOR IBM® PCs

- Design custom charts with unequalled flexibility.
- Choose from 8 major chart types displayed on the screen — 45 pre-designed formats.
- Experiment with the format of your chart components.
- Watch the editing process as you work.

$150.00 MFRS. SUG. LIST 250.00

MICROSOFT

It's the only software that gives you everything you need for business management. Word processing. Spreadsheet. Outlining. Graphics. Data management. Telecommunications. And more! And it does it all simultaneously, on a single screen.

$399.00 MFRS. SUG. LIST 695.00

dBASE III from Ashton-Tate for your 16-bit PC makes short work of payroll, accounting, inventory control, information management and many other bothersome business applications.

dBASE III is fast, powerful and extremely easy to use. And most importantly, easy to learn.

ASHTON-TATE

$399.00 MFRS. SUG. LIST 695.00

If you are new to word processing, you are about to experience an ease and flexibility in creating, editing, and printing your words that is not possible with pencil, pen or electronic typewriter.

MultiMate

$297.00 MFRS. SUG. LIST 495.00

TOOLBOX

Turbo Graphix Toolbox provides an interactive graphics system. Its complete library of graphics procedures and functions include easy-to-use tools for full graphics window management, precise curve plotting and fitting, and a full range of geometric shape drawings.

$41.97 MFRS. SUG. LIST 69.95

BORLAND INTERNATIONAL

TURBOPASCAL

Three leading modules take you from writing simple programs to using assembly language routines at Turbo speed. Comes with a 300-page quick study manual. the package also includes Source Code on disk for every example in the book.

$41.97 MFRS. SUG. LIST 69.95

TURBO GRAPHIX TOOLBOX

Speeding at 100 lines of code per second, Turbo Pascal lets you edit, compile and debug in one smooth sequence. The interactive compiler takes you to errors, lets you correct them, then continues compiling.

$41.97 MFRS. SUG. LIST 89.95

THE WHEREHOUSE

COSTA MESA.....2320 Harbor Blvd.	MOUNTAIN VIEW.....1939 El Camino Real	SANTA BARBARA.....3307 State St.
ENCINO.....17965 Ventura Blvd.	PASADENA.....3635 E. Foothill Blvd.	STUDIO CITY.....12123 Ventura Blvd.
GRANADA HILLS.....16852 Devonshire St.	REDWOOD CITY.....1932 El Camino Real	SUNNYVALE.....1060 E. El Camino Real
LAKEWOOD.....5255 Lakewood Blvd.	SAN LORENZO.....17750 Hesperian Blvd.	TORRANCE.....17542 Hawthorne Blvd.
LOS GATOS.....15466 Los Gatos Blvd.	SAN MATEO.....1934 El Camino Real	VAN NUYS.....15232 Sherman Way

Sale limited to stock on hand. Ad items subject to prior sale.

I think that the number one reason for our success with the Macintosh is that we dropped any further IBM-related development programs and devoted ourselves to Macintosh.

ware from, say, IBM PC software?

One of the big differences is that Apple and their in-house software team has already designed a number of functions for use by software designers. For example, one of the reasons that we can do the great graphics on the Macintosh is because Apple has already designed some of the most powerful graphics functions into ROM for us. This is how we are able to provide the user with a powerful forms processing capability in *Megaform*. In fact, I believe that Apple has over 100 man-years of software development time in the onboard ROM of the Macintosh. You just don't have that in other hardware systems. They gave us a lot more tools and, as a bonus, a much more powerful microprocessor chip in the 68000.

Most Macintosh users use their machines to run already written applications packages. Is it very difficult for actual users to develop their own applications-specific programs?

Up until very recently, it was very tough. Now that the BASIC compiler is out, it's not so bad. But when the Macintosh first came out, the whole idea was that unless you were working with Apple, and had the development system, you couldn't write your own software.

That's changing a little bit. The Macintosh is clearly different from other machines like the IBM PC/XT and the Apple II in that it requires a serious software development effort for any type of utilities programming. [Apple's] wish to maintain a "closed-box" system which is a productivity tool seems to be becoming a reality.

What about your software for the Apple II family?

For the Apple II family, we decided to come out with an add-on for the *Appleworks* program. The reason was simple. *Appleworks* was quickly becoming the best selling software product for the Apple II. So we quickly came out with *Megaworks*, which is a spelling checker and mail merge utility for *Appleworks*. We sell it at $125.00 and it is currently well up on *Softsell*'s "Hot List" of bestselling software titles. It has been a *very* successful product for us.

Do you see development for the *Appleworks* operating environment developing into a whole series of utility packages like, say, the old PFS program series?

I think that's the way Apple sees software development for the Apple II series going. *Appleworks* is just one example of that though. I believe that they are going to continue to write other Apple II-based utilities packages, as well as encouraging other third-party software houses like ourselves to do the same.

What do you see the Apple II as today, and what do you see it doing in the future?

The Apple II is a product that has the best software base currently available, but it's getting to be old technology at this point. I think you will see the Apple II family go towards — and it's happening already —a more Macintosh type of machine. You will have the Macintosh operator interfaces with the mouse, the pull-down menus, and the icons. They will, in general, try to make it more "graphic."

How about the Macintosh, now and in the future?

The Macintosh is going to need a built-in hard disk. Also, I think at some point Apple or some third-party hardware producer is going to have to give us a bigger screen which, ideally, would be of legal paper dimensions. I believe those are the two most important areas for improvement in the near term.

Copy protection of software is getting to be a real hot topic in the computer industry. What are your views on the subject?

We recently introduced a new copy protection scheme on our Macintosh software where we allow the purchaser to make their own backup copy. In the case of our *Megadesk*, we actually allow them to install it on six different program disks. *Megadesk* is, of course, a desktop accessory that we wanted users to be able to install on all of their Macintosh utilities disks. Right now, our copy protection allows the end user to install it once on a hard disk, leave it there, and still have a copy, or to make one backup.

In our view copy protection is like having locks. It is designed to keep honest people honest. People who *really want* to steal your software will, if they have the time, probably be able to do so. Ultimately, if you can create a copy protection scheme, someone can break it.

I think that copying software is wrong, and it is illegal. Fortunately for us, in the business world, the kinds of programs that companies are going to buy for use by their employees, as desktop computers become more powerful, are not going to be copied due to their lack of utility in the home. And as far as the company who bought the software, there is just too much risk, in terms of liability, to encourage wholesale copying of copyrighted utilities software.

There is a lot of competition in the computer industry that seems to bring out the beast in everyone at times. Sometimes though, some people seem to do things that just are *not* responsible. From an insider's standpoint, what's the current state of ethics in the industry?

I am often concerned for the consumer. If I were about to buy a personal computer or software, not knowing anything about it, it must seem to be an incredible jungle out there at the retail level. There is a real need for morally stable people in our industry. Not just to have software and hardware companies that produce products that perform *as advertised*, but also at the retail level with people who will take the time to sell people what they *really* need, and support those customers after the sale.

I also get *very* concerned when I see very extremely low prices on hardware or software. I *know* that the people who sell these highly discounted products are operating at such a low margin, they can't possibly provide any kind of support to the customer after the sale.

How important is it to the consumer who is considering a purchase to have a place that they take their machine to get the service and support that they may require in the future?

I think that it is very important, especially in the first year of computer use for most consumers, where they need someone who is competent with the systems and can spend their time servicing the consumer's needs. You can't spend follow-up time training people and showing them how to use their products if you aren't showing a profit. It just doesn't work that way in business.

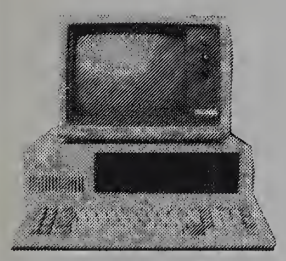
The Macintosh has been called the first of the second generation of personal computers. What do you see that second generation of personal computers, and second generation personal computer software, becoming?

I think that this can be broken into two answers. One, the second generation of personal computer will involve making the machines, and this includes the software, easy enough to use that the user can focus on what *they do*, rather than how to *make* the machine do things for them. I think that in the use of the first generation of personal computers, we all spent a lot of time wondering what, for example, *WordStar*'s command structure was all about, rather than using *WordStar* as a writing tool. That was a *lot* of wasted energy. I think that the major feature of the new generation of personal computers, like the Macintosh, is just to let people focus on what the machines *can do*, rather than how to use them. When it's a

Copy protection is like having locks. It is designed to keep honest people honest. People who *really want* to steal your software will.

THEY SAID IT COULDN'T BE DONE
IBM POWER AND PERFORMANCE AT ALMOST HALF THE PRICE

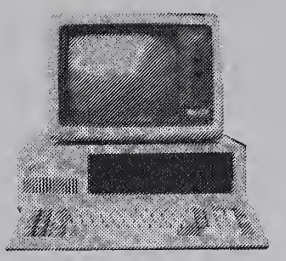
SPARTAN II



$1995
SAVE $1199
Compare to $3194 for IBM

FEATURES:
- 8088 CPU (4.77 MHZ) with 8087 Co-Processor socket built in
- 640K RAM on PC Board
- Two Half-Height 5¼" DS/DD 360K Floppy Disk Drives
- Amber Princeton MAX-12 Monochrome Monitor
- Monochrome Graphic Adapter
- Fully IBM Compatible HI-TEK Keyboard
- One Parallel Printer Port and Two Serial Ports
- MS-DOS and GW-BASIC included

SPARTAN XX



$2695
SAVE $1974
Compare to $4669 for IBM

FEATURES:
- 8088 CPU (4.77 MHZ) with 8087 Co-Processor socket built in
- 640K RAM on PC Board
- Two Half-Height 5¼" DS/DD 360K Floppy Disk Drives
- 20 MB Half-Height Hard Disk Drive
- Amber Princeton MAX-12 Monochrome Monitor
- Monochrome Graphic Adapter
- Fully IBM Compatible HI-TEK Keyboard
- One Parallel Printer Port and Two Serial Ports
- MS-DOS and GW-BASIC included

SUPREME TECHNETRONICS ANNOUNCES NEW BREAKTHROUGHS IN QUALITY AND SERVICE

OEM for Control Data Corporation Floppy Disk Drives Dealer Inquiries Welcome

- The most advanced Personal Computer System available
- The highest standards of manufacturing quality and superior reliability
- The STC SPARTAN XX will run all of the same popular business programs and printers as the IBM PC/XT
- Supports PC-DOS, MS-DOS, CP/M86 and concurrent CP/M
- More Memory and More Storage
- Supreme Technetronic Corporation is committed to providing you with the best products and services available
- One Year warranty on all Parts and Labor

Special Prices on Other Systems

ROMAN PC 256K RAM
$879.95
ROMAN XT 640K RAM
10MB Hard Drive
$1295.00
CENTURION 256K RAM
$1375.95
CENTURION TWO-0 640K RAM
20MB Hard Drive
$1789.95

SAVE ON PERIPHERALS

5¼" Half-Height Floppy Disk Drives
Toshiba ND-040 . . . . . $90.00
Control Data 9428 . . . . . $85.00
Mono Graphic Cards
M A Systems Mono Magic . . . $185.00
R-O-C Mono Graphics $150.00
Color Graphics Cards
M A Systems PC Peacock. . . . $165.00
R-O-C Rainbow $160.00
NEC 20MB Hard Disk Drive . . $460.00
DTC Hard Disk Controller . . . $155.00
IBM Compatible Keyboard $80.00
64K RAM Chips. . . . . $.55
256K RAM Chips $2.50

CABLES

Hard Disk Drive Cable. . . . $11.50
Floppy Disk Drive $10.50
Serial Cable (1-8 & 20):
6 ft $10.50
8 ft $11.75
10 ft $16.75
Parallel Printer Cable:
6 ft $19.00
10 ft $23.00
15 ft $30.00
Keyboard Extension Cables:
10 ft. $8.50
15 ft. $9.25
RS232 (DB25) Gender Changers:
Male $9.70
Female. $9.70
Male to Female. $9.70

CALL NOW FOR DETAILS

SUPREME TECHNETRONIC CORPORATION

3797 YALE WAY • FREMONT, CA 94538 • PHONE: (415) 490–7788 • TELEX: 5101009766 SUPREME TECH

major accomplishment just to learn how to use a piece of software, that's wrong. And this, I believe, is what's wrong with most first generation machines and software.

The other part of the answer, and this ties more into the software, is that now people can spend the majority of their time working on solving their problem *with* the computer. A good example is our product, *Megaform*. *Megaform* was designed using to full advantage the power of the Macintosh operating environment with its spreadsheet, data base, and graphics I/O capabilities. Basically, *Megaform*, with its ability to replicate a form, fill it out, and conduct calculations on that form, allows for a major increase in productivity by people who develop, fill out, file, and generally use forms. This takes on an incredible importance when you consider that in America alone we spend almost *five billion* dollars a year on printed forms. In fact, a recent article in the *Wall Street Journal* indicated that we spend up to *twenty times* that amount filling them out. This is only one example of an industry, potentially worth over one hundred billion per year, that second generation machines and their software can improve the productivity of. Microcomputers and software from the first generation never even tried to address issues and areas like this.

When you first got started as a "seeded" Macintosh software developer, what did you have to work with in terms of equipment, software, and support?

We had to purchase a Lisa and a Macintosh. That included all of their certified documentation as well as their operating system software. To be considered for that, we had to submit to Apple all of our other software packages like *Megawriter* and *Megaspell* for review. I then went up and met with Guy Kawasaki [Apple's Manager of Software Products]. We went out, talked over our ideas over sushi, and were then allowed to pur-

Keeping Up With Apple

Says Holly Caid, Apple II product manager and customer support manager at Megahaus, "*Megaworks* is a very successful Apple II product which is doing remarkably well. Additionally, of course, we are looking at ongoing Apple II-based developments because the Apple II is a very popular machine with everybody. Schools love it. Small business people love it. Home users love it. As a result, we are working very closely with Apple to develop additional add-on products as they develop *Appleworks* and follow-ons."

What was the background on the creation of *Megaworks*?

Everyone had heard how wonderful and great *Appleworks* was going to be when it was released. When it came out, it did so without, in our opinion, two very valuable functions: mail merge and spelling checking. *Megaworks* was the first package to address these deficiencies, and the only package, to date, to utilize the same keystroke commands that *Appleworks* uses. In addition, *Megaworks* uses the exact same type of file format as *Appleworks*, so you aren't having to save different file formats. Basically, if users know how to use *Appleworks*, they know how to use *Megaworks*.

Megaworks doesn't do anything that *Appleworks* already does; all it does is spelling checking and mail merging. And it does these things on *Appleworks* documents. You do all your printing, all your text formatting, all your word and file processing, data base management, spreadsheet work, etc. with the existing *Appleworks* utilities.

Since its release, what kind of support problems have you had with *Megaworks*?

It's pretty much run itself as a product. In fact, the biggest problem that we have had with *Megaworks* is not being able to get enough copies duplicated and packaged for sale. It has been a remarkable best seller.

Apple has been very pleased with what we have done with *Megaworks*, because it makes *Appleworks* a really complete package. So *they* recommend *Megaworks* as an add-on to *Appleworks* in their advertising and marketing promotions. They have also been involved with training their dealers on our products. As a result, we have a lot of unseen sales people out there pushing our products.

You have a new product for the *Appleworks* operating environment called *Reportworks*. How does *Reportworks* function within the world of *Appleworks*?

Reportworks is a report generation system based upon the same general concepts as our *Megaform* product for the Macintosh. What *Reportworks* does is utilize *Appleworks* word processing, spreadsheet, and data base files, and pull together a formatted report. The product is primarily aimed at people who use pre-printed forms, though some simplistic forms graphics capabilities will be available to users. The user will have the capability to lay out, on a page, areas of text, graphics, data base material, or whatever, and then set up that material to do whatever is wanted. For example, one area, or cell, on a page might have an invoicing layout complete with inventory drawn from the data base, and calculations from the spreadsheet. Another area might contain a comments section. This allows the *Appleworks* user to set up report formats that really match the specific needs of that user. In addition, it allows for much greater use of the *Appleworks* data base system due to the expanded sorting capabilities of *Reportworks*. *Reportworks* will cost $125.00. I might also add that we will be bringing out an updated version of *Megaworks*. The reason for this is that version 1.0, which is the current version, does not support operations on systems with hard disks.

PHOTO: ANN SUMMA

Holly Caid is Apple II product manager and customer support manager at Megahaus. She's also a strong proponent of the Macintosh as a serious business machine.

The new version will correct this.

How has it been developing software for a "mature" system like the Apple II?

As far as the Apple II itself, developing software is very simple. It has a huge installed base and is a relatively stable system configuration. As a result, developers are very comfortable spending development time and dollars on Apple II projects. The major problem with the Apple II is deciding what product to do and then doing it. I think because of our approach, and our consideration for future product development, we are going to key on enhancements or add-ons for the *Appleworks* operating environment. This is because Apple is not sitting still with *Appleworks*. I'm sure that we will be seeing a number of new internal changes and additions. If there's a tough problem in any software development effort, it's to keep all of the lines of communication open and clean. This is so that everyone involved in the project has all the current information to do their jobs and is not wasting time because of obsolete or superseded data.

Do you feel like the computer world is taking full advantage of the potential of the Macintosh system architecture?

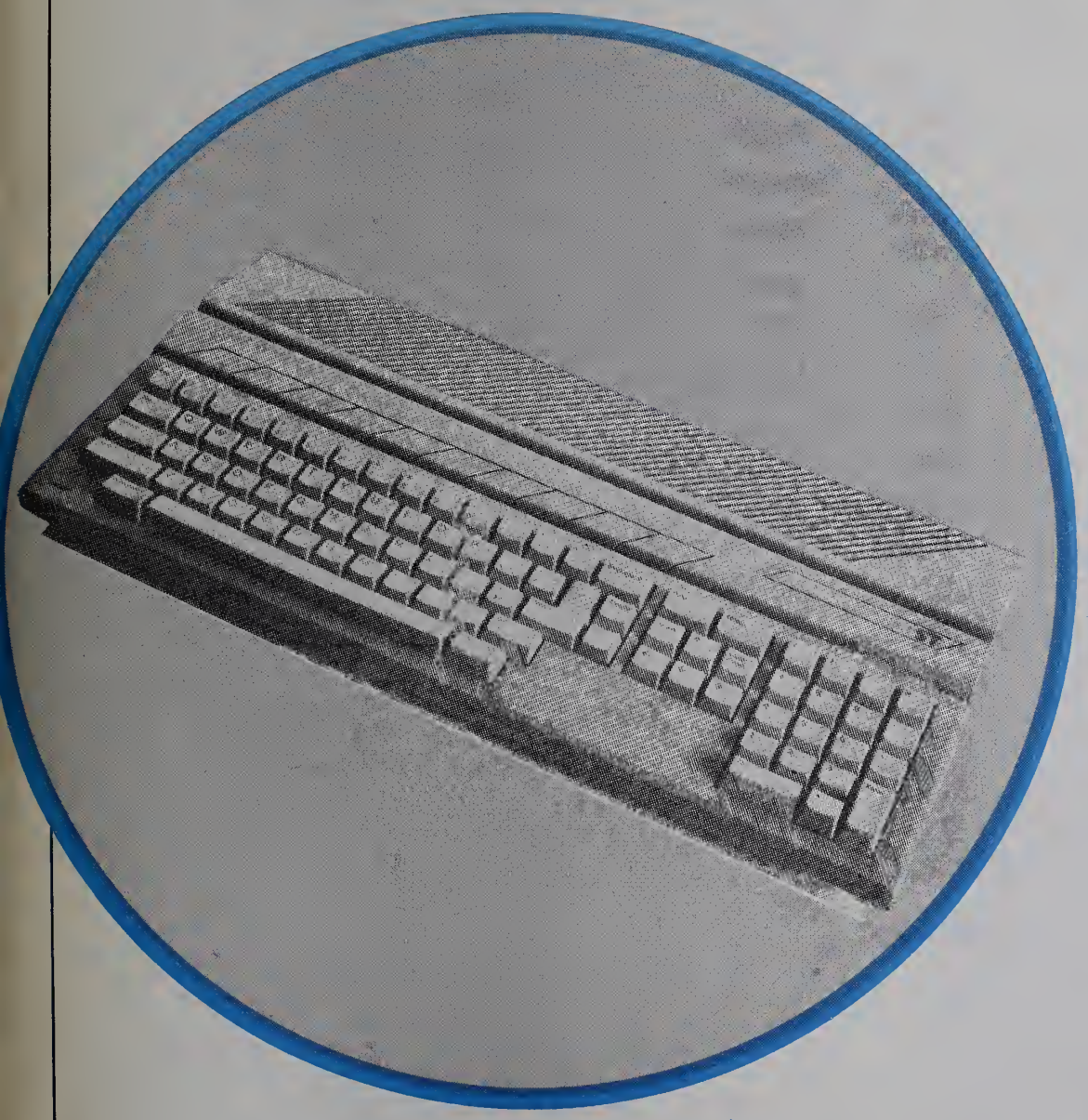
I really don't. Especially in light of the development of a product like *Megaform*. There are other graphics oriented products for various machines. But *Megaform* is the first, and only, product on the Macintosh that I can truly say could not have been done on any other machine, at any price, but the Macintosh. I think that only now are designers beginning to take advantage of, for example, the graphics power of the system to address areas previously untouched by the personal computer. The typesetting industry is a good example. But as far as the consumer end of the Macintosh product spectrum, the answer is a flat no. Corporate America is even worse.

Why do you think software developers have not embraced all of the features of the Macintosh operating environment? Is the Macintosh system architecture that difficult?

Well, my opinion says that people still can't believe that the Macintosh can be both simple and powerful. It's because people who learned to use computers in the early days of computing can't really believe that clicking a mouse and a few keyboard strokes can do anything useful. Certainly not *real* work!

The software developers' learning curves with the Macintosh also seem to have been longer because some of them seem to have a block in their thinking that says that "this is a little too simple." Also, it's a completely different programming environment that takes training at Apple's "Mac College" to make full use of the system's capabilities. Not that they have had problems with the system, or that it's a difficult system to work with, but they still tend to have ideas and prejudices left over from their development of software from other systems. I even know one person who says, "I would really like the Macintosh if they would just repackage it to look like an IBM PC."

The Professional ATARI 520ST



ATARI 520 ST

with COLOR monitor
512 K internal memory
1 3½" microfloppy drive
Parallel printer port
RS 232 serial port
MIDI port
GEM - graphics interface
Mouse
68000 microprocessor based CPU

$999

ATARI 520 ST Deluxe Professional System Includes:

Basic system PLUS

Diablo Advantage Letter Quality Daisy Wheel Printer ($599)

Express™ Letter Processor Software ($50)

All For

$1648

Additional Software Available

Communications		Graphics	
Chat	$19.95	Hex	$49.95
PC/InterComm	$124		

HABA Development 10 MEG Hard Disk $595

DYSAN 3.5" Microfloppies
Boxed (10) $24.95 Bulk (10) $19.95

ComputerLand® SOUTH BAY

Tues-Fri 10-7, Sat 10-5:30 **16720 S. Hawthorne Blvd., Lawndale, CA 90260**

(213) 371-4624 (213) 371-7144 (213) 370-1532

Telecheck

PERSONAL COMPUTER TALK RADIO COMES TO SAN FRANCISCO!

The Famous Computer Café

IS NOW OPEN FOR BUSINESS AT KXLR 1260 AM

Join Our Grand
Opening Celebration!
Enter the FAMOUS COMPUTER CAFÉ
GRAND OPENING GIVEAWAY!

GRAND PRIZE!!

A COMPLETE

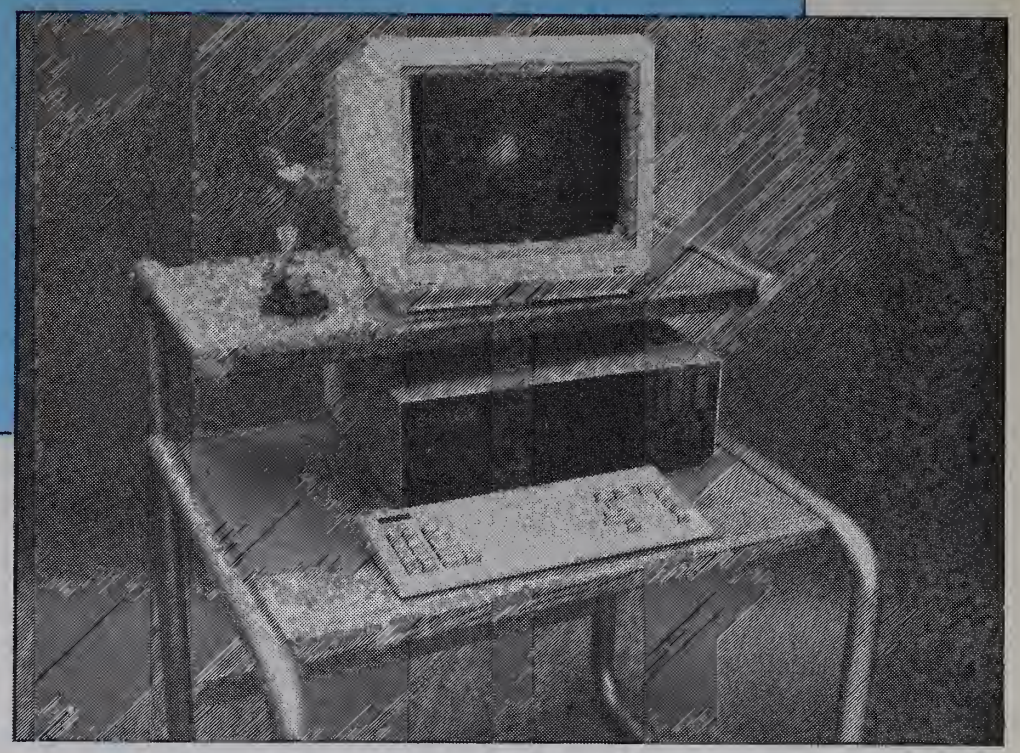
EMULOR

ET computer system!

System includes:

- ☐ 10 MB hard disk drive
- ☐ 360K Hi Tech Floppy Disk Drive
- ☐ 512K On Board Memory
- ☐ B&W/Color/Graphic Card
- ☐ 14″ Color Monitor
- ☐ Keyboard
- ☐ 9 Expansion Slots
- ☐ Serial & Parallel Ports
- ☐ Clock Calendar
- ☐ 130 Watt Power Supply
- ☐ IBM* PC Compatible
- ☐ Memory Expandable
- ☐ Game & Light Pen Port
- ☐ M.A.C. Computer Desk
- ☐ Tested and Approved by Pick Systems
- ☐ Pick Operating System and DOS

*IBM is the trademark of International Business Machines, Inc.



A

$4083

VALUE!

For more sales or leasing information, call Emulator Corp.
1-800-231-0744
or in Orange County, call Tiger Computer Corporation at
714-556-1466
in Santa Ana, call Abba Computer Systems at
714-966-1259
in Torrance, call Mitronics at
213-320-7011
in San Francisco, call Computer Solutions, Inc. at
1-800-424-1986

TWENTY 2ND PRIZES!!!

HI-TECH half-height 360K Floppy
Disk Drive from Hi-Tech Peripherals

LISTEN TO THE FAMOUS COMPUTER CAFÉ
IN SAN FRANCISCO
KXLR 1260 AM MON-FRI 9:30 PM
IN LOS ANGELES
KIEV 870 AM MON-FRI 3:30 PM
KFOX 93.5 FM MON-FRI 7:30 AM, 6:00 PM
Doctor Disk Thursday nights, 8:00 TO 10:00 PM

FIFTY 3RD PRIZES!!!

Box of ten ATHANA 5¼″
Double-sided Double-density diskettes

PLEASE enter me in the Famous Computer Café Grand Opening Giveaway!

Name _____

Street _____ Apt. No. _____

City _____ State _____ Zip _____

Phone _____

☐ YES! I listen to the Famous Computer Cafe! Station _____ Time _____

☐ NO! I've never heard of the show, but I'll be listening now!

ALL COUPONS MUST BE POSTMARKED NO LATER THAN NOVEMBER 13. WINNERS ANNOUNCED ON THE AIR ON NOVEMBER 15. Winners will be contacted by phone.

Send Entries To:
The Famous Computer Café
1322 Second Street, Suite 24
Santa Monica, CA 90401

GET A WRIST TERMINAL FOR YOUR COMPUTER

The Seiko Datagraph UNDER $200

Available for:

Apple II, II + , IIc, IIe
IBM-PC and compatibles
Commodore TRS-80

FOR COMPLETE PRODUCT LIST AND INFORMATION SEND ONE DOLLAR TO:

HI-TECH RECORD SYSTEMS©

13424 Whittier Blvd
Whittier, CA 90605

or call
In L.A. **(213) 945-2668**
Outside L.A. **(800) 448-5709**

ORDER NOW FOR CHRISTMAS DELIVERY

When it's a major accomplishment just to learn how to use a piece of software, that's wrong. And this, I believe, is what's wrong with most first generation machines and software.

chase the Macintosh development system that I just described. I think that it cost us about $10,000.00 for everything to get started. We think it was a great deal.

What were some of the problems that you had with some of your early Macintosh software packages?

The very first package was *Megamerge*. There were still a number of "bugs" in the various Apple-developed operating system interfaces, which resulted in some problems in our programs. At the time it was an obvious annoyance. In the end, though, we worked through our minor problems and got the packages out. In fact, by the time we got *Megafiler* out, things were really running quite smoothly. We had a little trouble with their print manager at that point, but basically the problems that we had were pretty standard for our industry.

What has your advertising and marketing strategy been?

When we first started, our strategy was to sell a $59.95 word processor. So we thought a full page ad, comparing our product to that of our competitors, would be a good strategy. That competition, at the time, was a product called *Applewriter*, which cost about $150.00. As compared to our $59.95 product, we felt that *Megawriter* was easier to use and in general, a better product. So we made a big deal about the price comparison between the products. We found though, that performance, not price, is what the public uses to judge the value of a product. While price does need to be advertised, what you really need is product and corporate credibility. This means that you need to discuss things like product support, ease of use, etc. In fact, as we have gone along, we've found that text, rather than pictures, tends to make for an effective ad. You do need to have a graphic or picture to capture the reader's attention. But then, they want to know *what the product is and does*. People in the industry seem to think that the readers of ads already know *why* they should buy a particular product. More and more, though, we are trying to suggest to the ad readers possible reasons why they should buy our products.

Why?

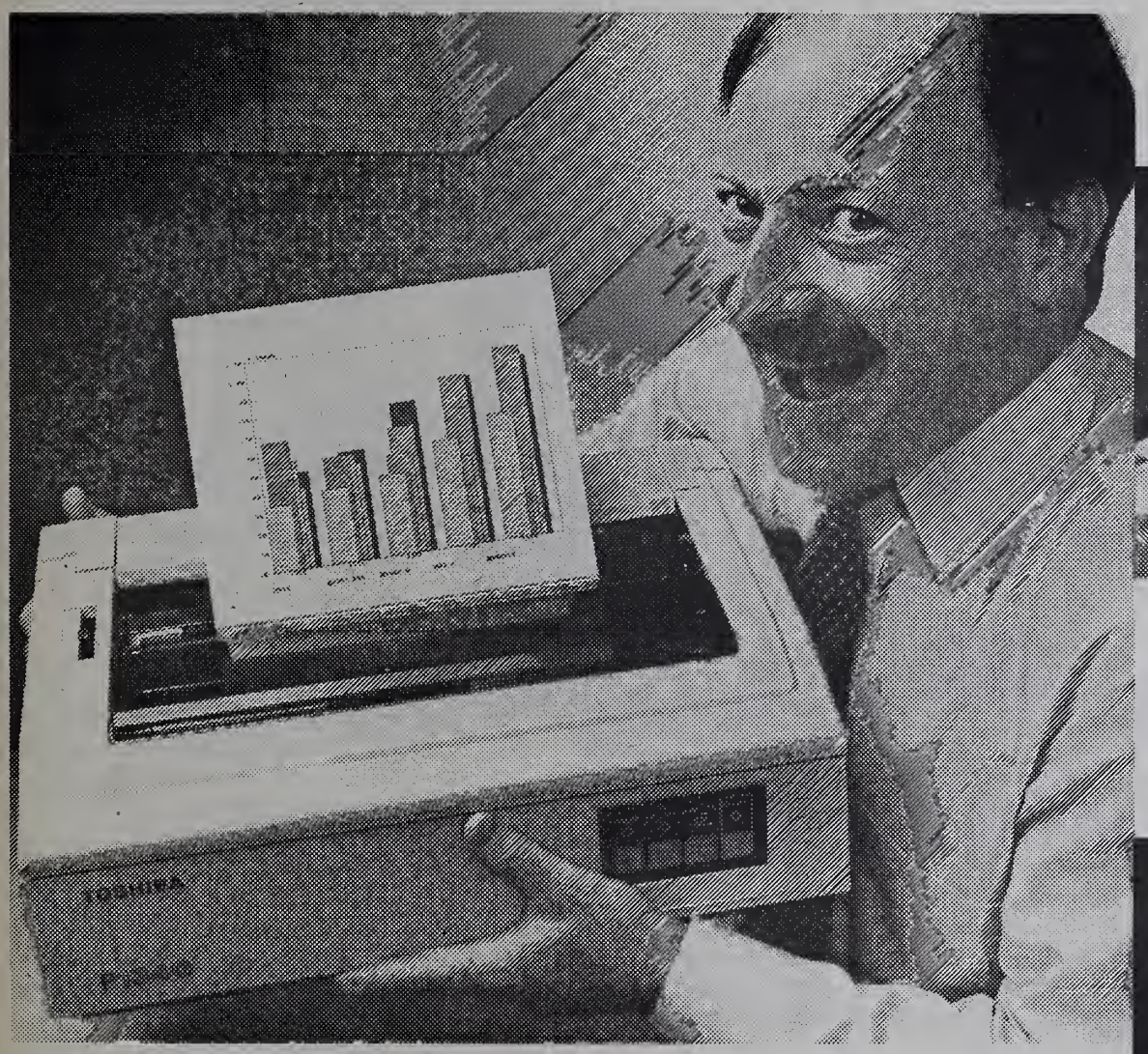
I think it has to do with the shifting nature of the "average" computer user in the consumer market. We have been seeing a gradual shift away from the user being an engineer/scientist to that of a business person/student.

The other thing we are trying to do is to advertise in the less technical, user oriented, computer publications. For example, we haven't done much advertising in *Byte*. You are far more likely to find our ads in magazines like *Personal Computing* and *Creative Computing*. As a rule, we just stay away from the purely technical journals, and try to point out the benefits of our products to the computer/software users.

It appears that Megahaus has found its market niche in the computer industry. Could you tell us where you would like to see the company go in, say, the next five years?

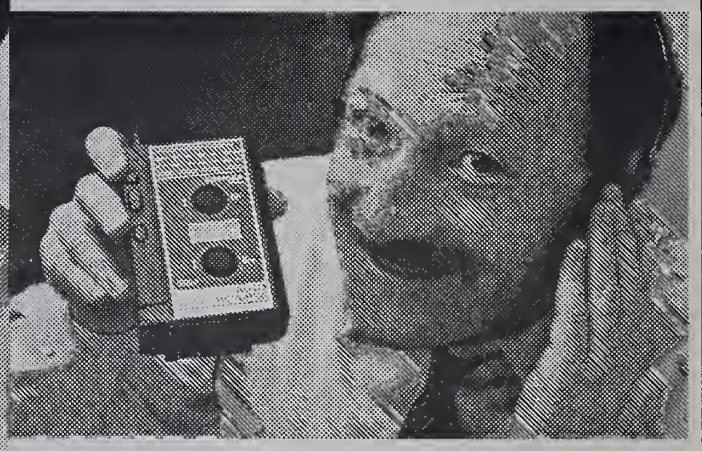
First of all, we want to be an industry leader in the Macintosh and Apple II software arena. In addition, I would like to see us produce software for any of the other new second generation machines that are coming down the road. As a corporate goal, we hope to become a publicly-held corporation in the next few years. That's a personal goal of Paul Stannard and I. In general, though, whatever the machine, to produce software that increases productivity for people in ways beyond what we know now. □

BUY THE WORLD'S FINEST COMPACT PRINTER BEFORE OCT. 31, 1985...



AND GET THIS FREE,

The Toshiba KT-4035 FM/AM/FM Stereo Radio Cassette Player with Dolby™ NR, auto-reverse and feather-light headphones. You'll be captivated by its quality workmanship and sound. (Suggested retail $99.)



...OR GET THIS FREE.

The Toshiba KT-M20 Voice-Activated Microcassette Recorder with carrying case, microcassette and earphone. Take this hard-working tiny assistant wherever you go and save your valuable ideas on tape. (Suggested retail $99.)

Toshiba technology puts BIG ideas into little packages: The P1340 3-in-One™ printer.

Shopping for a dot-matrix printer? You'll be astonished by the P1340.

Astonishing output quality: Toshiba's innovative 24-pin print head technology delivers superb, high resolution text and graphics. You get fabulous letter-quality text; ultra-high speed drafts; spreadsheets; and impressive graphics. Nothing makes words, Lotus™ 1-2-3™ or Macintosh™ output look better!

Reliability: The P1340's print head has a 200 million character life. That's 100 sheets a day, five days a week, for four years.

Compact size: It's hard to believe such high quality performance could come from such a remarkably small machine. The P1340 fits neatly on your desk; yet it offers BIG features like a built-in pin feed tractor, compressed printing and more.

Don't wait! This incredible offer ends Oct. 31, 1985. Buy the world's finest compact printer today.

$799 reg. $525 SALE

TOSHIBA

Trademarks: 3-in-One–Toshiba America, Inc.; Lotus, 1-2-3–Lotus Development Corp.; Macintosh–Apple Computer, Inc.; Dolby–Dolby Laboratories.

See the P1340 in action at:

TABLE TOP COMPUTERS

14717 S. Prairie Ave., Lawndale, CA 90260

master charge THE INTERBANK CARD

(213) 679-1151

VISA

HP's ThinkJet Printer: A Great Leap Forward?

By Mike Markowitz

The HP ThinkJet is an extraordinary feat of mechanical engineering. Whether or not it is a good printer depends on your specific needs. The great advantages of this unit are its amazing quietness, speed and compactness. The print quality is better than low-priced dot matrix printers but not true "letter quality." Graphics are well-supported, with a slight tendency to smudge. The main disadvantages are the special coated paper needed for optimal print quality, and the narrow carriage. Many users may find the paper feed mechanism frustrating. You cannot advance paper by turning a handwheel; you cannot "back-up" the paper easily at all.

In normal pitch the ThinkJet prints 80 characters across a 6.67 inch line. For comparison, Epson printers print 80 characters across an 8-inch line. You are obliged to keep nice wide margins when you use the ThinkJet, whether you want them or not. HP claims a speed of 150 characters per second in normal mode. A typical screen graphics dump takes less than a minute.

The print head is a disposable cartridge that contains an ink reservoir sufficient for 500 pages of normal print, according to the manufacturer. Replacing the cartridge is extremely simple, but the plastic parts that position and latch the print head appear to be rather fragile. The ink is squirted onto the paper through tiny apertures that can become clogged if the printer is not used for some time. Clearing the jets is a simple matter of poking the end of a paper clip against the ink bladder and wiping the face of the print head with a clean tissue. The print head costs about $6, and is sealed inside a neat little jam tin to keep it fresh. The diethylene glycol used as a solvent in the ink is toxic, so the print heads should be kept away from toddlers and pets.

The paper feed mechanism can handle single sheets. The friction feed wheels are made of a gritty substance that looks like sand embedded in plastic. The tractor feed pins can only be moved using the line feed or form feed buttons — no manual hand wheel. Loading paper is easy: this clumsy writer got it right the first time. To remove pin-feed paper you must flip back the ball roller and carefully unhook the sprocket holes of the paper from the tractor feed pins. It takes some practice to get the hang of it, but it is no great problem.

HP's operator manual is one of the best I have ever seen. It reflects their long experience as a maker of electronic test equipment. In the first section, all major functions are explained in pictures, with minimal text in English, German, French, Spanish, Italian, Dutch, Danish, Norwegian, Swedish and Finnish. In the second section (all English) all printer features, control codes, maintenance and troubleshooting, mode select switches and character sets are explained clearly and completely.

The Hewlett-Packard ThinkJet printer is compact and quiet, and may be the best and most economical printer for your needs.

The mode select switches ("DIP switches") are easily accessible on the back of the unit. On many other printers they are hidden behind panels or deep inside the machine. We have one location where the printer is used alternately with an IBM PC XT and an Apple II+. Changing between computers is quite simple.

The printer power switch is located on the back of the unit, but the red LED power on indicator is clearly visible on top. The line feed button advances the paper a fraction of a line when it is pushed once, a whole line when it is pressed a little longer, and continuously when it is held down. "Top of form" is reset to the current line position whenever the printer is powered up.

Our unit was supplied with a simple snap-together plastic stand that allows a whole ream of fan fold paper to sit under the printer, and keeps the power cord and cable neatly out of the way. The special paper is highly absorbent. If you spill anything on it, the ink will run. Felt-tip pens tend to blot on this paper, but pencil and ball-point write beautifully. In quantity, the paper is about $30 for a box of 2500 sheets.

The HP ThinkJet is ideal for an office environment where noise is a problem. The high speed of the unit is an advantage when drafts must be turned out in a hurry. The ability to do graphics gives it a definite edge over the typical office daisy-wheel dinosaur. HP's reputation for reliability and support has been well-earned over many years. If you need color, check out the new Canon color ink jet printer. If you need high speed with very high print quality, wait until laser printers become affordable. Otherwise, the HP ThinkJet may be just the right balance of price and performance for your needs and budget. A battery-powered version is available. □

How It Works: *The Technology Of The HP ThinkJet*

Typical printers for personal computers use electromagnets ("solenoid hammers") to bash formed letters or patterns of print needles against the ribbon. This takes energy. Some of this energy does useful work transferring ink to the paper. The rest becomes noise and heat. The noise makes us crazy. The heat wears out the moving parts.

The HP ThinkJet uses a print head with no moving parts. Only the ink moves. Tiny resistors behind the microscopic ink nozzles receive precisely timed jolts of current. Within microseconds, the temperature shoots up to over 300° centigrade. The ink adjacent to the resistor flashes into vapor, and the expanding vapor bubble acts like a tiny piston, forcing a droplet of ink out through the nozzle and onto the paper. The concept is as old as the steam engine, but to make it into a workable print mechanism, HP's engineers had to solve some tricky problems in miniaturization, materials, and mass production.

The entire print head had to fit into a volume of one cubic inch, including the reservoir of ink (over eight million droplets required!) The twelve nozzles, spaced only a quarter of a millimeter apart, could not have any "crosstalk" — each one had to be able to fire independently of the others. The disposable printhead had to make reliable, positive contact with the flex cable carrying impulses from the printer's circuit board.

The orifice plate, which contains the nozzles, was first designed with laser-drilled holes, but these proved to be too rough. For mass production, the part is formed by electroplating nickel onto a stainless steel form, then stripping off the formed sheet of 240 plates. These are bonded to a "substrate" containing the resistors and electrical contacts.

The ink is held in a collapsible rubber bladder, which allows simple visual inspection to see how much ink remains. As the reservoir empties, a slight suction caused by the natural resiliency of the rubber prevents the ink from "drooling" out the nozzles.

The power consumption of the print head is less than one one-hundredth of the current a typical dot matrix print head requires. The paper feed and print head drive motors were designed to use minimum power, doled out by a sophisticated switching power supply.

An optical "home switch" precisely times the arrival of the print head at a certain position, so the drive electronics can be continuously adjusted to maintain print alignment. A custom 48-pin microprocessor was designed for maximum compatibility with other Hewlett-Packard devices, while providing easy connection of the printer to Apple or IBM personal computers.

Weighing in at less than six pounds, and occupying a desk space no bigger than a good dictionary, the HP ThinkJet is proof that American technology can still compete with the best Japan has to offer.

AT&T

Personal Computer 6300

THE RIGHT CHOICE

*Does everything the **"IB Who?"** does, but a lot quicker, with better clarity.*

- *Internal Hard Disk storage—10 or 20 Mb • High Processing Speed 8 MHz*
- *Expandable Memory to 640K • Outstanding Graphics • Built in Printer and Communication Ports • AT&T Unbeatable Telecommunications*
- *MS/DOS for complete compatibility • Full Expansion Slots*

BUSINESS LEASES AND PERSONAL CREDIT AVAILABLE.

***AT&T 6300** Dual Floppy, 256K, MS/DOS, High Resolution Monitor, Color Board, Printer and Communication Ports* **$1,995**

As above but with a Single Floppy, ***20Mb** Hard Disk, and 256K Memory* **$2,695**

We also invite you in to see the new UNIX PC, a new concept in Computers, combining the best features of IBM, Macintosh, with Multi User Capability and the most advanced communication at any price.

Panasonic Exec.Partner

$2495

- *High Resolution Plasma Display (The clearest screen on the market)*
- *High speed processing (8086-2 Chip with 16 bit bus)*
- *Dual Mode internal printer*
- *Fully expandable to 640K Ram, full sized expansion slots available.*
- *Fully compatible with all IBM software.*

Panasonic Sr.Partner

$1,695

PRINTER SPECIAL

***Panasonic 1091** (Dot Matrix) 120 CPS, 2 year warranty, Parallel, Rated #1 in Consumer Reports* **279**

***Brother HR-15XL** (Letter Quality) 18 CPS, Daisy Wheel, Serial or Parallel* **$399**

Macintosh™

FOR THE REST OF US

Macintosh 128K	***$1,695***
Macintosh 512K (100% Apple)	***$2,195***
Macintosh 512K (128K + Upgrade)	***$1,995***
Macintosh 1Mb Ram (NEW)	***$2,695***
Upgrade 512K Macintosh to 1Mb	***$595***

HyperDrive

JaZZ™

A Winning Combination

10 Mb HyperDrive	***$1,795***
20 Mb Hyperdrive	***$2,595***
Lotus Jazz	***$359***

MACBOTTEM

10 Mb external Hard Disk	***$1,395***

AMIGA

NOW

COLOR GRAPHICS, ANIMATION, AND SOUND

The next generation is here today.

Amiga Computer System

INCLUDES:

3½" Floppy Drive 880K
High Resolution RGB Color Monitor
Motorola 68000 Processor, 256K Ram
Four Independent Audio Channels; MIDI
Five Graphics Modes up to 4096 Colors **$1,795**
Serial & Parallel Ports
Mouse & Multi-Tasking Software

2nd Disk Drive	***$295***
IBM Compatible Drive	***$395***

ALL PRICES ARE SUBJECT TO CHANGE, AND OFTEN DO. PLEASE CALL OR DROP IN TO OUR STORE FOR THE LATEST INFORMATION.

10517 West Pico Blvd.
(One block west of Beverly Glen Blvd.)
(213) 474-6409
Mon.—Fri. 10-6
Sat. 10-5:30
Sun. 12-5

VISA · MasterCard · AMEX

We accept Visa and MasterCard

COMPUTER SHOWCASE

Gateway To The Future

By Deborah D. Wolfgram

Orange County's Online News-Shopping-Banking-Entertainment-Travel Information Network

How would you like to be able to sit at home and order concert tickets, pay your utilities bill, or ask Dear Abby? Or maybe you'd rather check out the airline schedules to the Great Barrier Reef in Australia? You can do all of this plus much more on Gateway, an Orange County Home Information service.

Home Information Services such as Gateway are videotex bulletin boards offered to the public. Videotex means that the service has both visual graphics and text combined on the screen. Modems are connected to the computer to receive incoming calls from subscribers. The Gateway service requires a special terminal called Sceptre and a decoder unit (which contains a 1200 baud modem), which may be leased or purchased when you sign up for the service. This equipment is then connected to your television set or computer monitor and telephone line to complete the set-up. From the terminal you can connect with the Gateway service, which opens a whole new world of information and services.

Gateway was first offered in October of 1984. It is currently available only in Orange County and operates seven days a week from 5 a.m. to midnight. The service offers dozens of areas of information and products available to subscribers.

Using the service may be awkward initially, but all it takes is some time and patience. One of the most enjoyable ways to learn the system is to "jump in with both feet" and experiment with the system. It's like exploring a whole new world at your leisure. Instead of looking in the newspaper for movie showings, just call Gateway and find out which movies are showing in your area. The Gateway service is useful and educational for the entire family. Kids enjoy the service for the dozens of games available, many different from arcade video games, educational and mind-taxing. There are also challenging games for adults, such as backgammon and gomoku.

Let's get a quick overview of how the Gateway system is structured. There are eight main sections of the system, and within each system there are numerous subsections. Here are the main sections with a few examples of the dozens of subsections.

(1) **News**

- Top News Stories
- Weather Information & the Farmers Almanac
- Sports Scores and Upcoming Schedules
- Business and Financial Updates

(2) **Lifestyle**

- Health Guides, e.g. Drug, First Aid and Medical Encyclopedias
- Educational References for children and parents
- Dining Guides & an on-line Electronic Gourmet Recipe Book
- Travel Spots: San Diego, Los Angeles, San Francisco, Baja, New York
- Computers
- Dear Abby, Astrology Guides and Biorhythm Charts
- Recreational Guides for cycling, running and the beaches
- Book Reviews
- Bargain Shopping Areas

(3) **Entertainment**

- Entertainment News
- New Movie Releases, Now Showing, Family Guide
- Theater Openings, Dinner & Community Theaters
- Music Events for pop, rock, jazz and classical
- Television Listings, Trivia, and Soap Updates
- Calendar Listings for Movies, Theaters, Theme Parks, Music, and Museums

(4) **The Mart**

- Products and Services
- Merchants A–Z—subscribing merchants offering products and services
- Free Catalogs & Brochures
- Orange County Shopping at major shopping malls
- Comp-U-Store, the nations largest electronic shopping service

(5) **Games & Diversions**

- Trivia Quizzes, Backgammon, and the Wheel of Fortune
- Blackjack, Poker, Gomoku, Hangman and a Bridge Tutor

(6) **Your Desk**

- Mailbox and Letters
- Addresses
- Your Calendar
- Various Bulletin Boards such as Ask *Better Homes & Gardens*, Restaurants, Tech Talk, Happy Hour Board, Soaps, and Art

(7) **Banking & Investing**

- Security Pacific Video HomeBanking
- Stock Market data & your Personal Portfolio Tracking System
- Interest Rates for loans, IRAs, Certificates of Deposit
- Insurance Services through Equitable and John Hancock
- Credit and Charge Cards from American Express, Citibank, Sears, and Security Pacific National Bank
- Auction Block

(8) **Gateway Guide**

- Where to Look, Directories, What's New, and Customer Service

The question many ask is, "How useful is this service?" The biggest adjustment a potential subscriber must make is mental. You must retrain yourself to use the Gateway service instead of the newspaper, instead of writing checks for bills, and instead of going shopping at the mall. Once you are used to relying on the service as a tool and reference, you save time and money and become much more efficient in your daily operations.

As a subscriber you'll receive periodic *Gateway Videotex* newsletters illustrating new features, proposed features and a question and answer section. You'll also receive *The Gateway Videotex Directory*, which contains an in-depth review of the service. Since the service began the features have been growing at an astounding rate. Plans for future features promise to expand into new and exciting areas, such as a stock brokerage service, full travel and leisure services, restaurant reviews, and computer critiques. The service is also scheduled for expansion into the greater Los Angeles County. But one of the most exciting changes, due shortly, is the availability of promotional computer software for IBM PC and Commodore 64 owners who also have a 1200 baud modem. This software will allow subscribers to access Gateway from their computer and do away with the current Sceptre terminal and modem unit.

What do the users think? User Gregory McMurran feels that the system is excellent and provides a tremendous service to the public. He admires the timeliness of the news—"Within two hours after the end of the last Dodger game there was a review of the game. That's impressive!" Another oft-cited benefit is the amount of time saved once the user is familiar with the system. The keywords provide rapid access to the central information of the area the user is seeking. McMurran was impressed with how easy it was to learn the system. It requires no computer knowledge or experience to operate: "You can practically figure out how everything works just by playing around!" But most impressive of all is the tremendous amount of information that the user is able to access.

But just how useful is a service such as Gateway? The market for home information services is growing much more slowly than anyone realized. This is probably not because of the cost—a mere $30.00 per month. Rather, the problem is probably due to public unawareness of the benefits involved.

There are currently three home information services in operation nationwide. Viewtron in Florida has only attracted half its anticipated customers. Gateway has performed somewhat better; a third service in Chicago was discontinued due to the lack of customers. Although Gateway doesn't make subscriber information available, they do say that the system is a success. Penny Jo Welsh from Gateway Southern California says that the company is extremely satisfied with the growth in the number of advertisers and functions; she admits, though, that the number of subscribers has grown at a slower rate than hoped. It could be that this type of electronic service is several years ahead of its time. Many people in this generation have witnessed the introduction of personal computers. Getting used to using a computer is still new to many, let alone using a computer to shop at the local mall or order tickets. The penetration of the computer into the home is still in its infancy. But given time and exposure, home information services may well become an integral part of many homes and will provide a viable service. Ms. Welsh agrees that one of the most difficult barriers to the acceptance of the home information service is the matter of education. When introducing a revolutionary new product, the best way to advertise is by exposure and "hands on" experience. Time and hard work are Gateway's primary vehicles of attack. But it's likely just a matter of time before many will be familiar with these systems and their services. (To see a demonstration of the Gateway Videotex Service you can contact your local AT&T phone center. Or you may call the Gateway Southern California customer service number (714) 540-2733, or write Gateway Southern California, 3100 S. Harbor Blvd., Santa Ana, CA 92704. Gateway Southern California is an affiliate of Times Mirror Videotex Services.) □

A FREE Thinkjet Printer With Every Vectra System.*

The New Vectra

from HEWLETT PACKARD

IBM AT Compatible
Runs 30% Faster than AT
Uses 30% Less space
Comes with PAM (Personal Applications Manager)
Write your own applications easily & simply

Options:
Mouse
HP Touch - turns your monitor into a touchscreen
AND MORE!!

*or $100 off system price good until 11/30

Thinkjet Printer
Reg. $495 **Special $395**

Laserjet Printer
Reg. $2995 **Special $2395**

Attention: CPA's
Highly sophisticated accounting software from AMI -
HERE!

Leasing Available
Authorized Hewlett-Packard dealers

INFOMART COMPUTER CENTERS

22811 Hawthorne Blvd.
Torrance
(213) 373-6771

20969 Ventura Blvd.
Woodland Hills
(818) 992-0700

PHOTO: PAT JOHNSON STUDIOS

At the School, clients receive hands-on training to enable them to perform repairs on their own computers.

Do-It-Yourself Computer Repair

By Tim Tyler

You don't have to travel to the far ends of the earth these days to locate a computer training workshop. Several corporations and public entities have been instituting workshops that satisfy the need for computer instruction.

On the other hand, a computer repair workshop seems to be a rare commodity, especially one which travels all across the country. In fact, the Cascio School of Technology, based in San Ramon, is the first one of its kind, as far as anyone knows. This unique concept was the brainchild of Richard Cascio, a former computer repairman for the San Ramon Valley School District. His son John, who describes himself as "an overseer of things" at the San Ramon headquarters, says his father "came up with the idea a little over a year ago when he was working for the district. He took an analysis on microcomputer repair and realized anyone can perform the majority of repairs on personal computers." The results of his analysis revealed the following: 60% of all repairs were non-technical and capable of being fixed by anyone, 50% of all repairs requiring technical expertise could easily have been prevented, and 10% of all repairs that were not technical and were not preventable could have been remedied by chip substitution (replacing a bad chip with a good chip). Propelled by these findings, Cascio started his own school of technology.

The school offers two workshops, "Computer Repair" and "Disk Drive Repair." Both are one-day, eight-hour courses and are held in different cities around the United States, usually in a weekly series format. "We're in the Bay Area just as much as anyplace else," says John, adding, "The workshops are held in hotel conference rooms. We stay in the nicer hotels near airports because it's convenient for our clients who travel around a lot, plus it makes it easier on our instructors as well." Clients can select either the computer repair workshop for a fee of $150 or the disk drive repair shop priced at $195. Since the courses alternate every other day, people may choose to take both; in addition, private workshops can be designed for user groups and corporate training.

Every two students are provided with a microcomputer for ample hands-on training, or they may bring their own if they wish. Furthermore, each student is supplied with a tool kit, manual/troubleshooting guide, chip catalogues, and a full course lunch.

But the single most valuable aspect of Cascio's workshops is learning how to do the computer repairs yourself. In an age when most people have adopted an "I'll fix it myself" attitude due to sky-rocketing repair costs, Cascio's workshops certainly make good economic sense. As Lucinda Melchior, Cascio's marketing director, points out, "The minimum cost of repairing a personal computer is approximately $50. If you repair your system three or four times because of our workshops, then the course has already paid for itself."

John Cascio notes that a person can attend technical training sessions given by manufacturers like Apple and IBM, but says, "Some cost you around $1000, and they only teach you how to fix their brand of computers. In our workshop, one of the big things is that we don't get machine specific. We don't talk Apple and we don't talk IBM—we talk computers, period. We teach people how to apply the techniques on any personal computer."

Cascio's workshops attract a variety of clientele, but a large number of clients come from schools and businesses. John figures this is probably due to problems, associated with repair services, which have an adverse effect on the educational system and the business world. "The first problem, of course, is costs," says John. "Most people seriously pay for their repairs. In the schools, the factor of cost hurts because many schools cannot afford to get their computers fixed. With businesses, it's a matter of turnaround time, which in most instances is really poor. In the meantime, the business is losing money. Like with us—we could not afford to have our computer out for two or three weeks. My father has seen these problems, and he recognized the need in this community and others to minimize them.

"In the computer repair workshop," he continues, "our main objective is to give the user, without any prior experience, the ability to repair 75-plus percent of their problems on computers. It applies to all PCs, word processors, and to terminals off of mainframes; mostly with keyboards which go bad. This happens frequently because people have a tendency to spill their coffee or other liquids all over their computer." Adds Melchior, "The course also demystifies computers at the beginning of the class, which is how we help our clients get over the computer mystique."

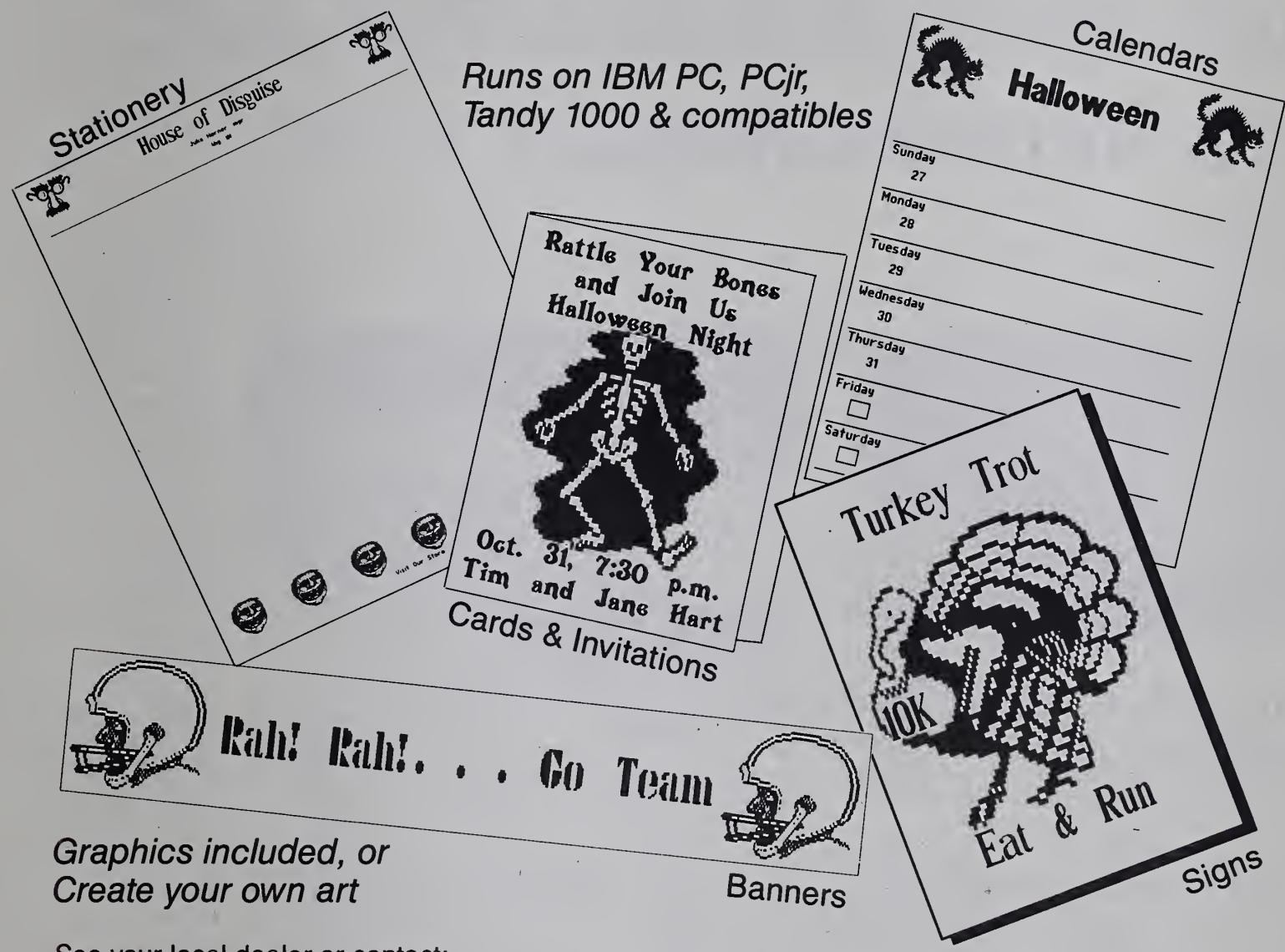
Add to the knowledge of the computer repair shop by taking the disk drive repair course, and John estimates that you can fix 90% of computer malfunctions on all PCs. The disk drive repair course deals strictly with the maintenance and repair of the floppy disk drive, the most common malfunction of personal computers. Students who select this workshop are also provided with an alignment device, invented by John's father, which eliminates the need for an oscilloscope. With the device, students can perform their own disk drive head alignment on all the front-running brands of disk drives.

While Cascio's School of Technology goes out of its way to meet the needs of clients, John emphasizes that the main concern is giving quality instruction. To ensure that students absorb all the necessary information, the class sizes are limited to forty students in the computer repair and thirty students in the disk drive repair course. "This way, we can devote specific attention towards people," reasons John. "The other way we maintain quality teaching is by hiring instructors who are of the highest caliber."

Melchior says John's father used to teach some of the workshops and would travel quite a bit. "He's too busy for that now," she says. "Dick is a real innovator and he's always been that way. If he wants to learn something, he'll sit down and read a book on the subject and learn it. The man is a musician, he can fix cars, or fix practically anything for that matter—Mr. Cascio has a very inventive mind."

John adds, "Basically what we have to offer is based on his forte. That is, the ability to take a look at the whole, condense it, and throw out all of the garbage and give back what you need to know in down-to-earth, easy-to-understand terms. It's an ability he has that's real rare." (Class schedules and registration forms can be obtained by contacting Cascio's School of Computer Technology at (415) 829-5140 in San Ramon. No pre-requisites are required for Cascio's workshops.) □

Turn your IBM into a personal print shop and celebrate the days of your life . . .with PrintMaster™ & Art Gallery I™



See your local dealer or contact:

Advanced Product Solutions 800 Charcot Ave. #110, San Jose, CA 95131
Phone toll free 800/451-0900* or mail coupon *in California call 408/263-9133

PrintMaster and Art Gallery I are Unison World products

PrintMaster and Art Gallery I are the trademarks of Unison World, Inc. IBM and PCjr, Tandy, Epson, Okidata, Citizen, Panasonic, Star, Smith Corona are registered trademarks of International Business Machines Corp.; Tandy Corp.; Epson America, Inc.; Oki America; Panasonic America Corp.; Star Micronics, Inc.; and Smith Corona respectively.

Order PrintMaster Order

APS, 800 Charcot Ave. #110, San Jose, CA 95131

Quantity

_____ PrintMaster at $59.95 each _____ The Creative PrintMaster: Graphic Design Tips
_____ Art Gallery I at $39.95 each for Computer Users (book) at $13.95 each

Amount: _____ *We pay sales tax and shipping to all US cities.*

Payment (circle): Am. Express VISA MasterCard Check

Card no. _____ Expir. date _____

Signature _____

Name _____

Address _____

City _____

State _____ Zip _____

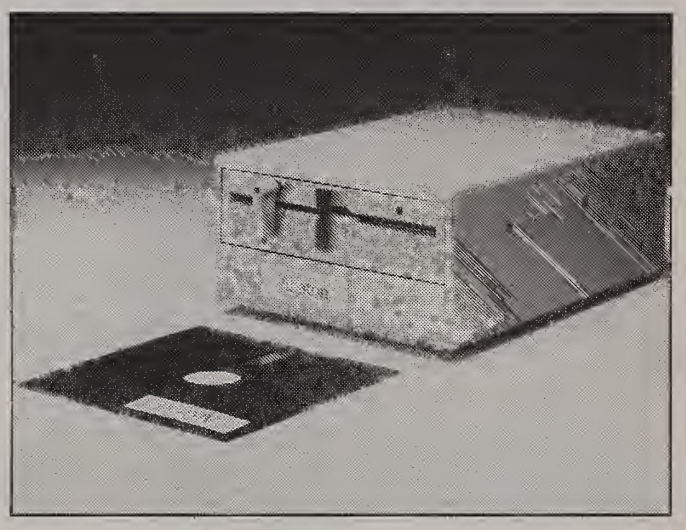
Make checks payable to APS

Supports Epson RX, FX, MX (w/Graftrax), & LQ-1500; Okidata 92, 93, 192 & 193; IBM graphics printer; Citizen, Tandy DMP-2100P & DMP-430; Panasonic KX-P: 1090, 1091 & 1092; Star Gemini & Smith Corona D300.

Abaton Technology: Shortcuts To Broaden The Mac's Software Base

By Mary Eisenhart

The Abaton Transform converts Apple II programs to run on Macintosh



The Abaton Drive 5.25 allows software from various 5¼" formats to be used on Macintosh computers.

Although the situation improves daily, one of the Macintosh's greatest drawbacks from the user's standpoint is the relative shortage of available software. While there's plenty available for most applications in Apple II, CP/M and IBM-compatible formats, there are still gaps in the Macintosh software market.

From the developer's point of view, there are good reasons for this deficiency. Each machine's individual version of a program has to be substantially reworked, often reprogrammed virtually from scratch. The Macintosh, with its 16-bit microprocessor and radically different user interface, poses particular difficulties. While larger software companies have the money and personnel to deal with this problem, the small developer often has neither, and thus finds the cost and effort involved prohibitive.

Enter Abaton Technology, a Santa Monica-based company founded in March 1985. Its goals, according to co-founders Glen Fleck and Byron Wagner, "are to break down barriers that hinder people from using computers and to create products that will make the personal computer, including Apple's Macintosh, more accessible to the non-specialist." Continues Wagner, "The philosophy behind the development of the Macintosh is a good one. Abaton intends to expand on that user-friendly ideology and thereby offer business people and educators powerful technological tools that do not require extensive computer technological knowledge."

Two of Abaton's initial offerings render Macintosh accessible at different levels. One, the Abaton Transform, is chiefly a developer's tool which converts Apple II application software into native Macintosh programs. The other, Drive 5.25, allows the Mac user to run programs created on IBM, CP/M, and, by early next year, Unix machines.

The Abaton Transform, available to programmers for $1995, translates Apple applications, including screen graphics, to Macintosh. The device consists of a sealed add-on card for the Apple, a cable and software on 5¼" and 3½" diskettes. The transformation procedure takes place at object code level and does not require source code, regardless of what programming language was originally used. The resulting program looks and works like the original program running in Apple II's monochrome mode. It respects the Mac's Finder and operating system, and may be copied or sent by modem. For simple applications, the procedure takes about 15 minutes; for the most complex Apple II programs, it takes less than six hours.

This, according to Wagner, is a particular boon to vertical market developers. He cites the hypothetical example of the author of a package for feed-lot management; it's been running quite nicely on Apple IIs for years, but now he's starting to get calls from customers who want to convert to Macintosh. Needless to say, such a developer doesn't have thousands of programmer-hours at his disposal. With the Abaton Transform, however, he can do what Wagner terms a "quick-and-dirty" Macintosh version that functions virtually identically to the Apple version; he can then test the waters and determine whether or not there's sufficient demand to justify the effort required to make the program fully utilize the Mac's features.

Fleck adds that another set of potential clients who express interest in the product are those who believed, years ago, that the Apple II could indeed be used for anything and proceeded to write their own software for their own personal use. Since these are not commercial developers, they don't want to go through the elaborate procedures and lengthy learning process of becoming Macintosh developers; they just want to convert to the more powerful machine. Again, the Transform meets this need nicely.

However, before you whoop with glee and rush off to buy a Transform to convert your software library to Macintosh, there are a few legal considerations. Wagner stresses that the product is intended as a developer's tool rather than a device for end-users; before you can buy a Transform, Abaton requires that you sign a lengthy licensing agreement which states in part: "To prevent possible infringement of a third party's copyrights, the conversion is licensed to LICENSEE on the express condition that it only be used to convert software the copyrights of which are owned by the LICENSEE or as to which LICENSEE holds an exclusive license." The Transform will also not work on copy-protected disks. Thus, the purchaser of the device is effectively prevented from copying commercial packages; the licensing agreement is also designed to prevent lending the device to third parties or the use of Transform by software copying services.

Abaton's legal consultants are working to broaden the range of Transform's legitimate applications. "The problem," Wagner says, is that our product breaks the usual barriers and isn't covered by existing copyright law." If the legal ramifications can be worked out, he suggests, the Transform device could be very useful to educational consortia which currently have a huge installed base of Apple II hardware and software and have been hesitant to invest in Macs. Likewise, user groups might be able to use the device to translate public domain software for members — if they had the permission of the programs' authors to do so. Eventually, Wagner says, there may also be Transform franchises offering the copying service to the public.

All of this, however, is still in the future. In the meantime, the Transform serves mainly to relieve the developers of many cumbersome, repetitive procedures in creating Mac versions of their programs; this, in turn, will give the non-programming Macintosh user access to more software.

On the other hand, Abaton's Drive 5.25 is intended directly for end users. It reads and writes files created on numerous 5¼" formats on the Macintosh. For example, a user with an IBM PC at work and a Mac at home can use files created on either machine on the other. (An additional benefit is that Mac files can be stored on 5¼" floppies, which are considerably less expensive than Mac diskettes.)

Drive 5.25 also operates as a stand-alone, 4 MHz, Z-80 CP/M system; it includes a licensed copy of CP/M 2.2 and documentation. This feature allows the user to run any of the vast number of CP/M programs — including *WordStar*, *dBase*, and *SuperCalc* — on a Macintosh. To further enhance its versatility, the drive has an external connection which supports single- or double-sided 5¼" drives, not to mention 3", 3½", 8", and some tape drives. It also has an RS-232 serial port and a Centronics-compatible parallel port.

Drive 5.25 currently reads and writes files created on a variety of IBM and CP/M floppy disks. By

RELATIONAL DATABASE $99
ACCOUNTING $149
WITH SOURCE CODE

If You Liked DBase III, You'll Flip Over TAS™

Hard-nosed business owners have been asking for the power of DBase III™ and RBase 5000,™ but without the high price. That's why Business Tools, Inc. created TAS.™

Compare TAS with DBase III and RBase 5000. You'll see why we think TAS is a better "Hard-Nosed" value than DBase or RBase. TAS includes a data dictionary. TAS includes a true procedural language. TAS includes a run-time compiler. Plus TAS supports multi-user record and file locking.

TAS lets you to develop your own professional menu-driven business applications. And not just simple ones either. TAS applications can hold up to 17 million records. And because TAS compiles them, they run fast.

But Why Is It Only $99?

We could have priced TAS at $695 like the other guys, it's well worth it. But we happen to believe "Hard-Nosed" business people are looking for real software value today, so that's what we've given you.

Take It From Hard-Nosed Phil Mickelson

If anyone's "Hard-Nosed" about good software, it's Phil. In 1982, he created The Sensible Solution™ (relational database). Now he's taken the next big step by creating TAS, the affordable software for your business. And it's backed with Phil's reputation and personal service.

TAS™ Runs On These CPUs

TAS is available for the IBM PC/XT/AT,™ Compaq,™ AT&T 6300,™ Tandy 1000, 1200, 2000™ and most MS-DOS,™ CP/M™ and MP/M™ systems.

	TAS™	DBASE III	RBASE 5000
Multi-User	**Yes**	No	Optional
Data Dictionary	**Yes**	No	Yes
Procedural Language	**Yes**	Yes	Yes
Compiler	**Yes**	No	Yes
Records Per File	**Unlimited**	Unlimited	Unlimited
Files Open	**16**	10	40
Fields Per File	**Unlimited**	128	400
File Size	**Unlimited**	Unlimited	Unlimited
Record Size (Fixed)	**10,254**	4,000	1,530
Field Size	**254**	254	1,530
Prices	**$99**	$696	$700

Get TAS™ Accounting Software for $249

But why stop with just a database? For just $249, you get TAS Relational Database/Language plus General Ledger, Accounts Receivable and Accounts Payable. And for $399 you get all the above plus Inventory, Sales Order Entry, Purchase Order Entry, and Payroll.

Source code Included FREE! So you can even modify the accounting to fit your business.

Call Today 1-800-648-6258

Call our Toll-Free Hotline. Use your VISA or MasterCard to order today.
Outside California call 1-800-551-1166.
California residents call 1-800-222-2252.

VISA MasterCard

BUSINESS TOOLS™

Accounting Solution

Copyright 1985, Business Tools, Inc.

The following are registered trademarks of these companies: TAS, Accounting Solution, Business Tools Inc; RBase 5000, Microrim Inc; DBase III, Ashton-Tate Inc; CP/M and MP/M, Digital Research Inc; IBM PC/XT/AT. International Business Machines Corp; Compaq. Compaq Computer Corp; AT&T 6300, AT&T Information Systems Inc; Tandy 1000, 1200, 2000. Tandy Corp; MS-DOS. Microsoft Corp; The Sensible Solution trademark rights are claimed by O'Hanlon Computer Systems Inc.

TAS™

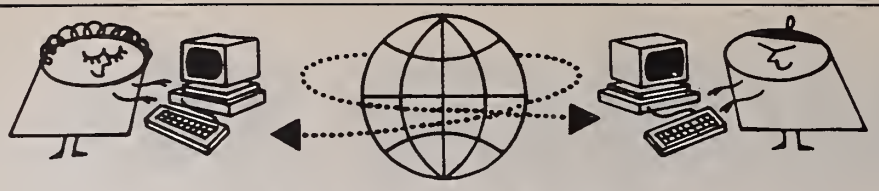
"Affordable Software For Your Business Needs"

NOT COPY-PROTECTED

Describe your computer system:
☐ 8 bit ☐ 16 bit
☐ PC-DOS ☐ MS-DOS
☐ CP/M, MP/M ☐ CP/M-86
Disk size is: ☐ 5¼" ☐ 8"
Computer name/model is: _____
Name: _____
Street _____
City: _____ Zip: _____
State: _____
Phone: _____

Quantity
___ TAS Database/Language–$99
___ Level 2 Accounting (TAS, GL, AR, AP)–$249
___ Level 3 Accounting (Level 2, SO, PO, INV, PAY)–$399
Subtotal: _____
(CA add 6.5% tax) _____
(USA - $5.00)
(Foreign - $10.00) _____
Total Enclosed: _____
Payment: ☐ VISA ☐ MC ☐ Bank Draft ☐ Check
(All amounts are payable in U.S. funds only.)
Credit Card Expiration Date: _____
Card Number: _____
Signature: _____

THE BUSINESS DISTRIBUTORS
763 Circle Court
So. San Francisco, CA 94080



USE YOUR PC AS A TELEX

FREE TRIAL

FREE TRIAL

With

CompuTelex™

- Automatically send and receive telex messages all over the world from your personal computer.
- Eliminate costly telex terminals and line charges.
- Single key to send/receive telex messages through a regular telephone line.
- All messages are logged with time & date.
- Built-in message editor,
- Fully menu driven
- Built-in telex directory.
- Extensive on-line help.

FULL MONEY BACK GUARANTEE

Priced at $149

No shipping charge if prepaid by Check, Visa or MC. COD accepted.

CompuTelex™ communications software

Micro Computer Trends
8421 Wilshire Blvd., Suite 202
Beverly Hills, CA 90211

(213) 653-4331

TWO DAYS ONLY — SAT. & SUN., OCT. 19th & 20th

Southern California's Giant Bargain Show

FOURTH GIANT COMPUTER SELLATHON AND EXPO '85

OVER 150 EXHIBITORS — THOUSANDS OF COMPUTER & SOFTWARE BARGAINS — $$$ MILLIONS IN VALUE AT CLOSE-OUT PRICES

PC's modems, monitors, printers, software, books, games . . . you name it! More than 150 exhibitors will be selling the largest variety of personal computer products ever seen under one roof at Southern California's Fourth Giant Computer Sellathan and Expo '85.

Computer Sellathan and Expo '85 is Saturday and Sunday, October 19th & 20th, 1985. Hours are 10 a.m. to 5 p.m. Saturday and 10 a.m. to 5 p.m., Sunday. Admission is just $6.00. Children under 12, $3.00. One admission good for both days.

$1 SAVE $1 ON ADMISSION WITH THIS COUPON
DUPLICATE COPIES ACCEPTABLE
LIMIT ONE COUPON PER ADMISSION

Directions: Harbor Freeway to Expasition. Right on Figueroa to Jefferson.

SHRINE EXPOSITION HALL
700 W. 32nd Street
Los Angeles, California
Plenty of Parking Available

2 DAYS ONLY

FOR EXHIBITOR INFORMATION

CALL (818) 905-5476
8W&A PROMOTIONS
Suite 397
14755 Ventura Boulevard
Sherman Oaks, CA 91403

January 1986 it will also handle Unix files.

Practically speaking, Drive 5.25 should provide considerable impetus in Apple's campaign to convince the business community that Macintosh is more than a toy. Using the drive, those who always liked the Mac's ease of use and saw the potential of its power, but couldn't bring themselves to part with *1-2-3*, can now enjoy the best of both worlds.

For information about these and future products, contact Abaton at 1526 Cloverfield Blvd., Santa Monica, CA 90404, (818) 905-9399. □

Serious Mac Exploration With MacNosy

By Mary Eisenhart

Since the dawn of Macintosh, Apple Computer has been exceptionally supportive of would-be software developers, providing them with reams of documentation in the form of *Inside Macintosh*, along with extensive technical help. Nonetheless, developers soon discovered serious gaps in the available information. Prospective upgraders had trouble figuring out how the Mac's ROM worked. Software developers encountered significant obstacles in their attempts to discover how different Mac programs interfaced with each other — which, in turn, interfered with their efforts to create software that worked with existing applications. Sometimes, after months of waiting and miles of red tape, the information was forthcoming. Sometimes it wasn't.

The computer world being what it is, there's usually somebody around who's only too anxious to fill such vacuums. In this case, it was Steve Jasik, whose explorations of the Macintosh and its 68000 microprocessor chip led him to create *MacNosy*, a global interactive disassembler which allows the recovery of source codes from Macintosh application files, ROM, or code resources on the System file.

MacNosy is a serious tool; if you're not a knowledgeable programmer with a good command of assembly language, it's not going to be of much use to you. If, on the other hand, you're trying to write software for the Mac, or engaged in some other enterprise that requires knowledge of the machine's inner workings, it might make your life a lot easier.

According to Jasik, *MacNosy* has been used for a variety of reasons, ranging from an educational aid to teach programmers 68000 assembly language and effective programming techniques (by studying the work of those who have gone before) to finding and bypassing what Jasik, with true hacker enthusiasm, calls "obnoxious copy protection schemes." (He cautions, however, that much existing copy protection, especially in games, is encrypted to such an extent that *MacNosy* can't unravel it.) It's also been used to reconstruct information on crashed disks.

MacNosy arose out of Jasik's own interest in exploring the Macintosh. His chief experience with computers before the Mac's advent was with mainframes at Control Data Corporation, where, among other projects over the years, Jasik wrote a global optimizing FORTRAN compiler for CDC's Cyber 170 systems. His specialty was in code generation; however, in his pursuit of knowledge about the 68000 chip he decided that writing a code generator would be far too time-consuming and that writing a disassembler would be more practical.

In the pre-personal computer days, recalls Jasik, source code was freely available, out of necessity. Programmer B could not proceed with his work without access to Programmer A's code. After the personal computer arrived on the scene, the programmer's life became more complicated, information harder to get, and disassemblers more useful. "A disassembler," Jasik explains, "reverses the process of program assembly. It takes a file that consists of object code for a given machine and translates it back to a sequence of instructions and data expressed in assembly language format. Given the poor quality of the [Mac's] documentation and the general lack of source listings, a powerful disassembler is a useful tool for debugging and getting information about the system."

For memory upgraders and software developers who want to optimize their use of the Mac's operating system and existing programs, *MacNosy* has proved a valuable tool by addressing a significant information need. Or, as Jasik puts it, "Apple's been very cooperative with developers, but I felt there was a big information gap between what was available from Apple and what developers really wanted." For more information and a detailed explanation of how it works, contact Jasik Designs, 343 Trenton Way, Menlo Park, CA 94025, (415) 322-1386.) □
322-1386.) □

Lots of dollars.

Lots of sense.

$69.95

Dac Easy /Accounting

They've been doing it for years. Selling you accounting software module by module, till before you know it you've paid up to five thousand dollars for a complete system. That's a lot of dollars... which doesn't make good business sense.

Now, there's a better alternative. Dac Easy Accounting. For only $69.95, Dac Easy is a fully integrated accounting package offering instant access to General Ledger, Accounts Receivable, Accounts Payable, Inventory, Purchase Order, Billing and Forecasting. And Dac Easy has the flexibility to manage either product or service oriented businesses.

It's not just the price that makes Dac Easy better. Only Dac Easy saves three years of history in all files, making automatic forecasting easier and more accurate. Plus, you can generate any of 300 different reports for instant access to the exact information you need.

Dac Easy is menu-driven for ease-of-use, and comes with easy-to-understand documentation inside a handsome slip-case binder. It's also non-copy-protected.

Listen to what experts are saying:

"Dac Easy Accounting is remarkable, amazing, revolutionary, sensational..."
Computer Buyer's Guide & Handbook, September 1985

Find out for yourself why Dac Easy is the fastest selling accounting package in history. Compare Dac Easy's range of features against systems costing thousands more. You'll see how Dac Easy can save you lots of dollars. Which makes a lot of sense.

PARTIAL LIST OF FEATURES

General Information
- Menu driven
- Password protection
- File capacity limited only by disk space
- Support contract available

General Ledger
- Unlimited multi-level accounts
- Three-year account history for CRT inquiry
- Pencil and pen feature to correct mistakes
- Unique budgeting routine
- CRT transaction inquiry
- Activity report, trial balance, financial statements, unlimited departments and journals

Accounts Receivable
- Open invoice or balance forward
- Customized aging report
- Unlimited number of customers
- Flexible mailing labels and directories
- Supports partial payments & finance charges
- Three-year customer history for number of invoices, sales, costs, and profits
- Customized statements
- Cash flow analysis sales analysis
- Automatic sales forecasting

Accounts Payable
- Check printing with multiple invoices and cash available routines
- Aging reports with seven customized columns
- Unlimited number of vendors
- Flexible mailing labels and directories
- Three year vendor history
- Unlimited allocations per invoice

Inventory
- Supports average, last purchase, and standard costing methods
- Powerful physical inventory routines
- Accepts any unit of measure
- Three-year product history in units, dollars, cost, and profits
- Automatic forecast of product sales
- Automatic pricing assignments
- Alert and activity reports with 11 sorts
- CRT shows on-hand on-order committed sales cost profit turns GROI

Purchase Order
- Inventory and non-inventory items
- Allows up to 99 lines per P.O.
- Per line discount in %
- P.O. accepts generic discounts freight taxes insurance
- P.O. accepts back orders and returns
- Purchase journal

Billing
- Service or Inventory invoicing on plain or preprinted forms with remarks
- Prints sales journal
- Allows return credit memo

Forecasting
Unique program that automatically forecasts using your three-year history:
- Revenue and expense accounts
- Vendor purchases
- Customer sales, cost, and profit
- Inventory item usage
- Forecast by same as last year, or % base from last year, or trend, or least square trend line analysis method

Now Available in Northern California
To Order Call:
Amcal Marketing Co.
(415) 861-0563
or Send Coupon

Amcal Marketing Co.
1225 6th St., S.F., CA 94107

Send in this coupon with your money order or check for **$69.95** plus **$5.50** for postage and handling. **CA residents add 6½% sales tax ($4.55)**
for C.O.D. Allow 10 days delivery.

☐CHECK ☐MONEY ORDER ☐COD

Name _____

Company Name _____

Address _____

City _____ State _____ Zip _____

Phone _____

Signature _____

30 Day Money Back Guarantee: dac software, inc. provides a 30 day money back guarantee that all claims and features listed in this ad are true.

Minimum Hardware Requirements:
IBM (PCjr, PC, XT, or AT)[1] or other compatibles. 128K memory, one 5¼ DSDD floppy disk, 132 column printer in compressed mode, 80X24 CRT, MS-DOS[2], PC DOS[1] 2.0 or later.

[1]Trademarks of International Business Machines Corporation.
[2]Trademark of Microsoft Corporation.

Dac Easy /Accounting 00

DATA BASE MANAGEMENT

Designing The Database Structure: 11 Questions

By Bill Amatneek

We should design the structure of a data base file carefully and systematically; it is the basic building block of our database. Productive information retrieval begins with a structure that will serve all our present and future information needs.

The structure of a database is the foundation into which you pour your data; it can be thought of as including the database file name, the number of records, and the last update, but most importantly it contains information about the database Fields (or Columns). Most database management systems (DBM's) ask the user for three pieces of information on each Field being created: the **FIELD NAME** that you wish to call it, the **FIELD TYPE** which designates what kind of data will be entered in that field, and the **FIELD WIDTH,** which represents the greatest number of spaces allowable for data in that field. Numeric fields automatically call for the number of **DECIMAL PLACES** needed. Unfortunately, not all DBM's make all possible Field Types available to the user. The common ones are Character, Numeric, Integer, Real, Date, Time, Currency or Dollar, Boolean or Logical, and Memo.

Before you create a new database or table, you should ask the following **11 Questions** about your file. Doing so will help insure that you have included enough fields in your database. These 11 questions define the relation of the primary field to the database, and of all the other fields to the primary field. If you start adding data to a file and later discover that you have not included a needed field, adding that field can be accomplished without too much difficulty in most DBM's. But adding one piece of data for this field to each record you have already appended can be less than fun.

On the other hand, be careful not to include un-needed fields in your database. The inclusion of fields with data that will never be used or reported on will unnecessarily fatten the database, and increase your data entry time.

WHAT

This is the most important question. The one-word answer to "WHAT is this file about," is THE most important field, the primary field of your database. Another way to look at this question is, "If you could only have one field in your file, WHAT would it be?"

For many applications, two or more fields are needed to answer the question "WHAT." A personnel file may have an entry for the employee's **FIRST NAME, LAST NAME, SOCIAL SECURITY NUMBER** and **EMPLOYEE NUMBER.**

Sometimes we must decide whether a field which will contain all numbers should be declared Numeric or Character type. Remember that "Numeric" means "number-like," and any field declared Numeric should use its data in a number-like way. This means doing math with the data — adding, subtracting, dividing, multiplying — or using the data to keep count of consecutively numbered items.

A field that held Social Security Numbers, for instance, should not be declared to be Numeric, since you will not be doing math on the data, such as dividing a Social Security Number by 17. On the other hand, Receipt or Invoice Numbers "keep count" of documents for us and so require number-like use of data. They are best kept, with most DBM's, in Integer or Numeric type fields.

	Field Name	Type	Width	Decimals
1	FIRSTNAME	Character	16	0
2	LASTNAME	Character	24	
3	SSNO	Character	11	
4	EMPLNUM	Character	8	
1	ITEM	Character	12	
2	PARTNUM	Character	7	
1	INVOICE	Numeric	6	0
1	RECEIPT	Integer	6	

WHICH

"WHICH" is the question you must ask of your "WHAT" field if the data in the "WHAT" field can be broken down or defined further. Got that? One indication you may need a "WHICH" field is if commas, or spaces between words, appear in some of the data of the "WHAT" field. If some entries in a field called ITEM looked like:

camera, 35mm
8mm camera

you should probably create another field called TYPE to hold the "8mm" and "35mm" data.

	Field Name	Type	Width
2	TYPE	Character	12
2	MODEL	Character	7

HOW MANY

"HOW MANY" means the **QUANTITY** present of the "WHAT" field entry. Quantity could mean quantity-on-hand, quantity-ordered, quantity-backordered, and so on. It could mean you'll need a number of Quantity-type fields. Conversely, if the Quantity is always 1, or always the same, you won't need a Quantity field. A personnel file always has a quantity of 1 person per record, so a Quantity type field would be redundant, and furthermore, wouldn't be needed, either.

This brings us to the famous "Bill's Rule of 9's." (Or maybe it's someone else's rule and it's not so famous after all). We need a consistent method to save off sufficient field and decimal width to handle all possible data which we will have to enter in our numeric type fields.

We do this by writing a 9. on a piece of paper and asking ourselves if our data would ever go higher than 9. If so, we write down a second 9 next to it: 99. Again we ask if our data will go higher than this number: 99. If so, we add a third 9: 999., and repeat this process until we are fairly sure we will never have to input data larger than that number.

We can similarly determine the number of decimal places. Let's say we have decided that our data will never go higher than 999. Now we add a 1 to the Right of the decimal point: 999.1, and ask whether an increment of .1 (or one-tenth), is small enough for our needs. If not, we add a 0 to the right of the decimal: 999.01. But 222 and 1/8 pounds (222.125), for instance, could not be accurately entered if only 2 decimal places had been saved off. We must add another 0 to the right of the decimal point, finally arriving at a decimal number sufficiently small to handle our data: 999.001.

Then we must ask if our data could go negative *and* positive, as in the weighing of inflated and uninflated hot air balloons. If so, we'd have to reserve another space for the + or − sign. Finally we count the spaces we've filled, including one for the decimal place, for a total width of 8, of which 3 are decimal places: ±999.001.

	Field Name	Type	Width	Decimals
3	QUANTITY	Real	4	0
3	UNITS	Integer	4	
3	POUNDS	Numeric	8	3

OF WHAT

Sometimes all the items on your list will not come in the same UNITS or UNIT OF MEASUREMENT. In a supermarket, for instance, the Units of Measurement vary; some items are measured in pounds, some in gallons, some in ounces, and so on. The "OF WHAT" question defines this Unit of Measurement, if it is needed.

It won't be needed if the UNITS is always the same for every record. Under some circumstances more than one "OF WHAT" field might be called for if the items in question are measured in more than one way (by weight AND by volume, for instance). By example:

	Field Name	Type	Width
4	UNITS	Character	2
4	MEAS	Character	10
4	VOLUMEAS	Character	4
5	WEIGHTMEAS	Character	4

AT WHAT RATE

This usually means the "price per unit of measurement," and ties in with the "OF WHAT" or "WHAT" field. It is usually referred to as Unitprice, Unitcost, Salary or Wages. Here are some examples:

	Field Name	Type	Width	Decimals
5	UNITPRICE	Dollar	6	
5	UNITCOST	Currency	6	
5	WAGE1	Numeric	6	2
5	WAGE2	Numeric	6	2

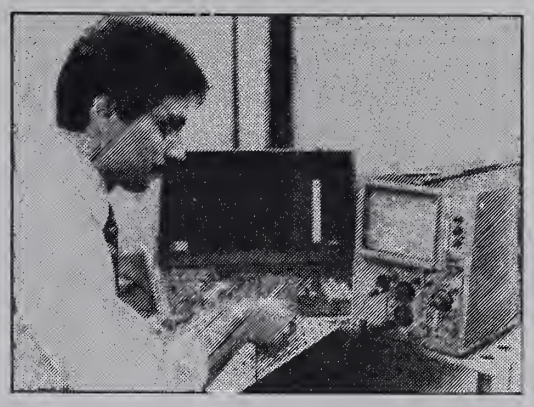
(A different rate for overtime pay, perhaps)

Bill Amatneek is a database consultant and trainer. He will be teaching "Winery Database Management" at U.C. Davis on October 26 – 27, and giving a talk/demonstration on dBASE III compilers at the Marin dBASE Users' Group meeting, Thursday, October 17, 7:30 pm, at Citicorp Savings, in Novato. He can be reached at 415/388-8024.

Let the ATS Team Take The Worry Out Of Your Manufacturing

ATS INC.
- O.E.M. (Original Equipment Manufacturing)
- Full Service TURNKEY Manufacturing
- High Volume Production Capabilities

WE PROVIDE
- Procurement of ALL Components From Fabrication to Sheet Metal & System
- Board Level Assembly
- Functional & Incircuit Testing
- System Assembly
- Burn-in
- Custom Packaging
- Ship Direct To You or To Your Customers



Functional Test and Trouble Shooting GEN-RAD ATE.

Advanced Technical Services

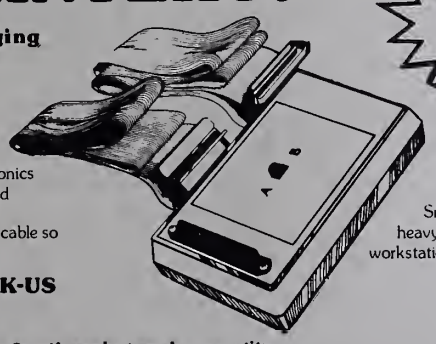
47650 Westinghouse Dr, Fremont Ca 94538

(415) 490-7111

Telex 701 050 ATS FRNT

ONE COMPUTER & TWO PRINTERS?

$65.95 (#2100) Plus $4.50 Shipping & Handling



Stop Plugging & Unplugging
Use your choice of printers on ONE COMPUTER with a simple flick of a switch.

One Parallel Plug In, Two Parallel Plugs Out.
To install, connect any standard Centronics Parallel Cable directly to the switch, and connect the switch cables to each printer. You can even use your existing cable so no extra cables may be required.

Compact Design
Small (5¼" x 3⅜" x 1⅛") heavy duty enclosure fits any workstation or even wall mounts. U.L. Approved

Simply Call 1-800-TO-ASK-US
(In California 415-567-4067)
EASY TO ORDER
Simply Write or Call Tipz Direct, inc. Specify product number, quantity, and payment info (Visa, M/C, or M.O.). Provide name, address, area code, and phone. Each order is shipped within 48 hrs. via UPS.
Ordering Assistance Available 24 hours.
CA Residents Add 6.5% Tax
Tip- MTM 121

Tipz

Tipz, P.O. Box 690, San Francisco, CA 94101

Tailored to YOUR office

COMPUTER FURNITURE

Seating
Printer Stands
Acoustic Covers
Accessories

data design furniture
(213) 202-7300

COMPUTERIA
computer rentals™

Come and Play with our Macintosh & LaserWriter
(rent by the hour)

11742 W. Pico Blvd. W.L.A.
(1/2 Block W. of Barrington) **477-0518**

AIMS

IBM PC REPAIR

- ON SITE SERVICE
- MONTHLY MAINTENANCE CONTRACTS
- 24 HOUR EMERGENCY SERVICE LINE
- HOURLY RATES AVAILABLE

(800) 242-AIMS

WHERE

"WHERE" can mean many things. It can mean "Where is this item located?," "Where was this contact initiated?," or, "Where did this transaction take place?" These are usually character fields; sometimes many fields are needed to describe WHERE:

	Field Name	Type	Width
6	ADDRESS1	Character	25
7	ADDRESS2	Character	16
8	CITY	Character	16
9	STATE	Character	2
10	ZIP	Character	5
6	MET___AT	Character	20
6	TO	Character	20
6	DEPT	Character	6
7	AISLE	Character	2
8	ROW	Character	2

WHY

WHY means, "WHY is this entry on the list?"; "Why is this here?"

This could refer to the "credentials" presented which enabled the item or person to get onto the database. Or it could refer to the person who referred the customer, sold the item, or OK'd the item's entry on the list. Try these:

	Field Name	Type	Width	Decimals
7	SALESPERSN	Character	3	
7	REFERDBY	Character	20	
7	CREDENTIAL	Character	15	
7	APPROVEDBY	Character	3	
7	INSPECTOR	Character	2	

WHEN

"WHEN" defines the time frame of an event. Many databases include date data because pinpointing an event in time is usually important. Many DBM's have a Date Type field and date handling abilities; there is at least one notable exception.

Sometimes two or more DATE fields will be needed to pinpoint starting and ending dates. For some applications, the date AND the time will be important. Some DBM's have a time field; other alleged heavy-hitter DBM's do not. Time is often entered in "military" format, using the 24-hour clock:

hh:mm:22 or
hh:mm.

Nine forty one and a half P.M. would be entered as:

21:41:30 or just
21:41

if seconds were not important.

	Field Name	Type	Width
8	DATE	Date	8
8	TIME	Time	
8	INTRODUCED	Date	8
9	ADMITTIME	Character	5
8	HIREDATE	Date	8
9	FIREDATE	Date	8

IF

IF means "IF this item is currently in the database." Time has a way of deleting records from a database even as others are appended. Maybe an inventory item is no longer stocked, or perhaps the only employee who knows how to run the computer has quit. You might not want to entirely remove that item or person from the database. You might want some record of the entry — an emergency phone number perhaps — hanging around.

There are many ways of dealing with this, short of copying such records off to another file. With either of the *dBASE* Bros., we can use the **.DELETE** command to mark records for deletion. Without actually removing those records from the database, the deletion process puts them "out of the way" of our data processing. With *dBASE III*'s **.SET DELETE ON,** we can additionally get these records out of our sight during **LIST**ings and **DISPLAY**s.

We can alternately create a Character or Logical field to hold information regarding the status of that record. These fields might look like this:

	Field Name	Type	Width
9	STATUS	Character	1
9	ONLIST	Logical	1
9	CURRENT	Boolean	1

A *dBASE* command to show records that were currently "on" this database might look something like this:

.LIST FOR status-"C" or
.LIST FOR onlist

This second command, which uses a Logical-type field "onlist," is equivalent to saying "List For onlist = True," where the "=True" part is not stated. The opposite command, to list the record not "on" the database, would be .LIST FOR .NOT. onlist.

IF NOT WHY NOT

This field works with the "IF" field, if an "IF" field is present. The question is: "IF the item is NOT currently on the database, WHY NOT?"

An inventory item may be discontinued; a person may have passed on to that Great Database in the Sky. This will usually be a Character or Memo type field, either long enough to hold some sort of comment or explanation, or short enough to hold a coded reference:

	Field Name	Type	Width
10	REASON	Character	12
10	WHYNOTCODE	Character	1
10	EXPL	Memo	10

WHO

WHO means "WHO entered this data into the list?" If you are the only person who will ever put data into a file, then there is no need to create this kind of field. But if more than one person is going to be doing data entry, this field could come in handy. Data entry errors that are spotted can be traced, and the guilty party ostracized — forced to work on the outskirts of Silicon Valley.

	Field Name	Type	Width
11	INITIALS	Character	3
11	ENTERER	Character	2

In summary, your database may require no fields to answer some of these questions and it may require many fields to answer just one of these questions. I hope the worksheet which follows will be of use to you.

Database name _____ : _____ . _____

Question	Field Number	Field Name	Type (Character; Logical;Memo; Date;Numeric; Time;Currency Real;Integer)	Width	Decimal Places
WHAT					
WHICH					
HOW MANY					
OF WHICH					
AT WHAT RATE					
WHERE					
WHY					
WHEN					
IF					
IF NOT WHY NOT					
WHO					

The Case For Strategic Planning

By L.K. Engelhart

People who have to operate a business will tell you that theories about how to do it aren't much help. Being closely in touch with what's happening is what works.

As reasonable as this approach to operating a business may be, there are types of changes an operator may contemplate which cannot be carried out successfully simply by making decisions and acting on a day-to-day basis. We are not talking about your ordinary operating level decisions here; some changes need an enterprise-wide adjustment involving the overall goals of the business.

Because of the nature of the change in the business, installing computer systems demands planning on a higher level than most businesses have had to address since start-up.

First, A Little Theory

The way I see it, we make critical decisions about how to act at this moment by comparing two images we have of the future. First, there is the image of the world as it will be if we do nothing at this moment. The second image is of the world as we would like it to be. Producing a world with the qualities we want it to have may require us to act. If those actions are required not only at this moment, but also at specific times in the future, we have a plan.

This type of plan I will refer to as a tactical plan. A strategic plan is somewhat different. Let me refer you back to the second image of the world I mentioned above, the image of the world the way we would like it to be. This image does not occur spontaneously to us; we have to work to get it. Frequently it must be chosen from many possible futures we can envision. And since we intend to invest a good bit of our resources in this future, we do a good bit of agonizing over choosing it. The process we go through to pick the best possible future is called strategic planning.

The Need For Strategy

Your business strategy is a logical relationship between your business and the rest of the world that enables you to make a profit. Obviously, something this important we don't leave up to chance. Although there may be some trial and error involved in finding it, a way to make a profit is the only way we are going to survive and prosper. Learning the ropes, or the logic to profitable operation, may take quite some time, and is frequently the major edge we have.

There seem to be three dimensions to business strategy. One, we need to have intimate, detailed knowledge about the community of which our business is a part. Two, we need to understand the forces at large in our community and the relationships between them. Three, we need to understand how our business relates to the community and its forces. Understanding these three dimensions, we have to find a way, logically, that we can make a profit.

For many businesses, this understanding comes about almost intuitively. I maintain that when a major change is contemplated in business, it should be consciously considered in relation to its impact on this overall strategy. Installing computer systems in a business is a change which I believe calls for such an approach.

Computer Oriented Strategies

There are some rampant misconceptions about the role computers play in modern businesses. This is partly because the role of computers has changed considerably in recent times. At the same time computers have become affordable to smaller businesses, their capabilities as business tools have taken a quantum leap. Many large businesses that have used computers for decades are having difficulty taking advantage of the opportunities offered by the new technology; however, these capabilities are immediately available to businesses that are just beginning to invest in computers.

Computers are no longer just business machines. Our businesses have always had information systems, but the computer technology we have available today makes it possible to install computerized information systems which resemble, in many ways, an organic nervous system. Networks and the potential for distribution of equipment, processing and information as part of a single system create some profit-making opportunities for business.

Up until just a few years ago, computer applications were installed in a business independently of each other. These applications served a specific functional area well, but there was no overall design effort to provide for inter-application sharing of information or, most importantly, to provide decision making information for general management. Many large businesses are now stuck with systems that manage information resources unprofitably and are unable to satisfy many of the information needs of management. Any business can be saddled with the same obsolete system design unless it learns from those who have gone before.

Modern information system professionals treat information as a business resource and plan for integrated applications to support the information needs of the entire enterprise. The modern approach produces a system which is as modular and dynamic as the business itself, because its design is derived from and is driven by the strategic goals and objectives of the business. All of its parts work together, and it is capable of adapting to the current environment because top management sees to it.

The Case For Strategic Planning

You can't buy a system like this off the shelf. It's not the software that makes a system work; it's not the hardware; it's not even the procedures. It is the people who have always and will always make any information system work. Most importantly, management is the essential element in making modern information technology work.

The first thing that has to happen is for the operator of the business to choose the information technology future as the image of what the future "should" be. In many cases, the strategic goals and objectives of the business will have to be restated from their initial form at start-up. An analysis must be done of the potential opportunities offered by information technology which can be applied specifically to this business' strategic goals and objectives. Finally, the operator must decide whether a computer-oriented strategy represents the best possible future for the business.

Even if computer systems are not chosen as the means for supporting the information needs of the business, this strategic plan is essential to any tactical planning the business does to implement its chosen best possible future. In any case, the strategic level effort to define the business' information needs will produce a clear, logical statement of those needs. Any problems with the existing information system will be identified. Future alternative opportunities will have been defined and prioritized for later consideration.

The profitability of any investment in information technology is directly related to the strategic planning done to tailor the technology to a business' strategic goals and objectives. Experience has shown that major benefits result from creation of a high-level design for the system which does not change with lower level changes in implementation priorities and techniques. A side benefit may be the tendency of the business to continue the practice of strategic planning. □

MACINTOSH

THE COMPLETE MACINTOSH SOURCEBOOK

By Barbara Leone

Yes, ladies and gentlemen, The Complete *Macintosh* Sourcebook is here. Granted, to some extent this book was becoming obsolete as it was being developed, but this is the case of all such books. And even so, it is still very useful. If you use this along with the Redgate publication *Macintosh Buyer's Guide*, (and, of course, **MicroTimes** Magazine) you can feel pretty well informed of the products available for the Macintosh.

The Complete Macintosh Sourcebook, written by Doug Clapp and Pat Ryall, contains descriptions for each of the products it features. The authors have structured the product descriptions in such a way that they sometimes relate their good or bad experiences with the product. Unfortunately, they do not do this for every product described.

This book contains virtually every category of software & services available for the Macintosh. In the chapter on Special Interest Software, the authors admit that they did not include special chapters for Scientific, Home Control and Vertical Market Software, mainly because no or very few products exist in these categories. Still, you may be surprised at what does exist. Amazingly enough, there are applications like *The DNA Inspector* (used for analyzing genes) and *DietMac*.

The business section contains descriptions of products for financial management, such as the Quest *Client Write-Up And Small Business System*, to be used for small business accounting. The product descriptions have a retail price listed and are laid out in alphabetical order by company.

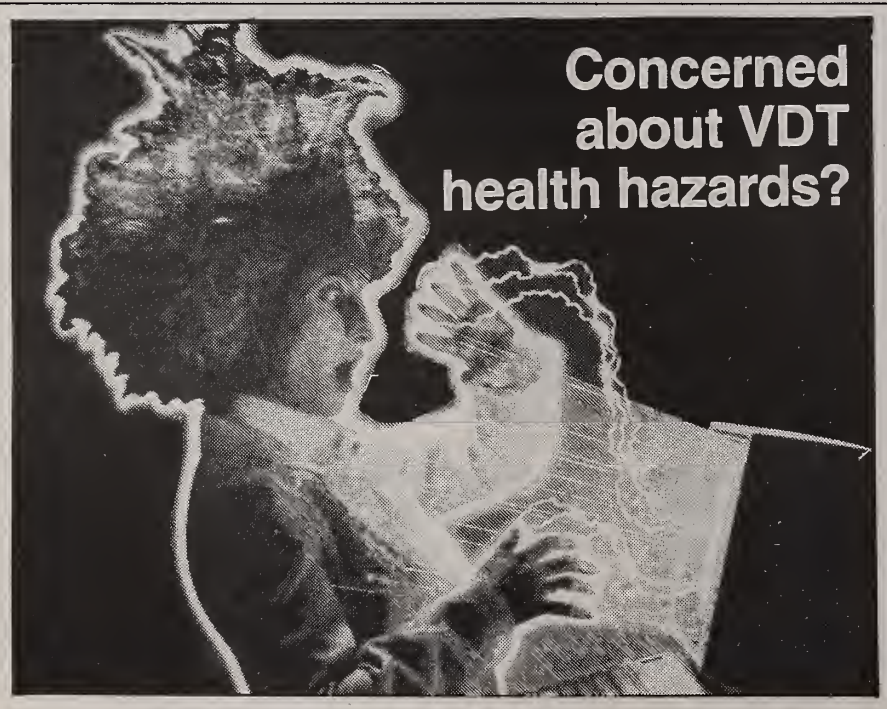
When going through *The Complete Macintosh Sourcebook*, I noticed that the authors were very honest about their experiences with the products mentioned. However, there are some inconsistencies in format—in some cases the descriptions include information about manuals and tutorials, and in others these things are never mentioned.

The smallest section of the book is the one on Integrated Software, largely because there are still so few such packages available. This section contains those few programs for the Macintosh that are considered integrated software, like *Jazz*, *Quartet*, *MacOffix* and *Ensemble*.

Another chapter talks about Desk Accessories. Some of the best ones mentioned are *ClickArt Effects* by T/Maker Graphics and *The Desk Organizer* by Warner Software. *ClickArt Effects* is designed for *MacPaint* and has outstanding features. I am most impressed by its ability to take a *MacPaint* picture and make perspective changes — stretch it toward the horizon, for instance, or do rotation by degrees. *The Complete Macintosh SourceBook* describes *The Desk Organizer* as "an instant file cabinet, an appointment calendar, an expanded notepad, a telephone dialer, a printer, a visual calculator with paper tape, a clock watcher, and more. The program isn't a true desk accessory; instead, it's a multitude of desk accessories rolled into one application program."

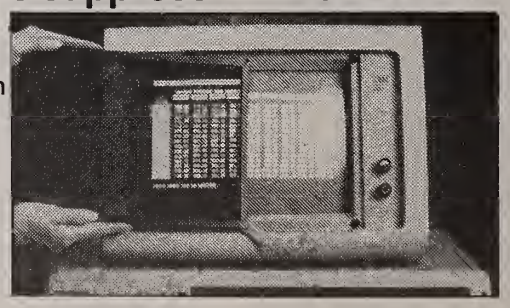
Other chapters include information on Word Processors, Games & Diversions, Educational Software, Personal Finance, Utilities, Graphics, Sound & Animation, Communications Hardware & Software, Hardware and Accessories, Publications, Becoming a Macintosh Developer, Programming Languages, Free (Or Nearly Free) Software, User Groups, Telecommunications Services, Companies, CompuServe Maug Macintosh Directory and Too Late to Integrate (other products from the categories above, which arrived too late for inclusion in their proper chapters). Anyone who is still saying that there isn't any worthwhile software for the Macintosh ought to get a copy of this book. (*The Complete Macintosh* Sourcebook, Info Books, P.O. Box 1018, Santa Monica, CA 90406.) □

Barbara Leone owns and operates Microsource Consulting Services in Orinda, California. She works with all sizes of business training and consulting on the Macintosh and IBM personal computers. For more information call: (415) 254-4999.



Power Screen™ filters suppress VLF radiation!

ADDITIONAL FEATURES:
- Trap harmful static fields
- Reduce glare • Reduce eyestrain
- Enhance contrast
- Protect hardware/software
- Over 100 models



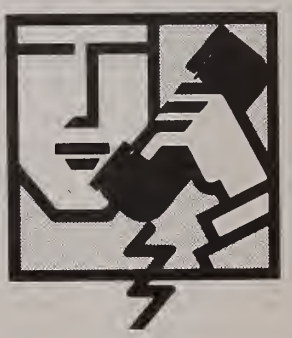
OTHER PRODUCTS:
Printer sound covers • Chairs
Glare filters - $19.95 + up
Adjustable computer furniture
Many other accesories

Call for a **FREE** filter trial

ERGONOMIC COMPUTER PRODUCTS
"PEOPLE PRODUCTS FOR THE COMPUTER"
1850 Union St. Suite 125
San Francisco, CA 94123
(415) 673-5757

The Smart Answering Machine

For IBM-PC and Compatibles



SAM turns your IBM personal computer into a sophisticated voice messaging center that helps you communicate more effectively with your clients, associates and others.

S·A·M·

Retail Price $295

- Preprogrammed Outbound Calling: Both Timed and Group Message Delivery
- Stores Separate Personal Messages Retrievable by up to 999 Different Callers.
- Full Remote Interface with Voice Prompting, Message Retrieval, Message Recording and Programming of All Features.
- Real Voice Recording and Playback.
- Call Screening
- Auto-Dialing Phonebook Data Base
- Date and Time Stamping of All Messages.
- Uses 256K, Floppies or Hard Disk, No Modem Required!
- Stores and Forwards Your Messages to You.

Available Now from

DIALECTRON, INC.
(415) 960-3040
2035 California St., Suite 17 Mountain View, CA 94040
Dealer Inquiries Welcome

DYNAMIC RAMS

41256
256KX1
QTY. 1
(120ns) $3.15
(150ns) $2.50

128K
128KX1
PIGGY BACK
(150ns) $4.25

4164
64KX1
(120ns) $0.75
(150ns) $0.65
(200ns) $0.65

STATIC RAMS

6264
(8K X 8)
LP-12 (120ns) . . . $5.50
LP-15 (150ns) . . . $4.50

6116
(2K X 8)
LP-2 (120ns) $2.15
LP-3 (150ns) $1.75

5514
(1K X 4)
APL-2 (200ns) . . . $2.95
AP-2 (200ns) $2.50
APL-3 (300ns) . . . $2.25
AP-3 (300ns) $2.15

E. PROMS

27C256 (250ns) $12.95
27256 (250ns) $7.25
27128 (250ns) $2.75
27C64 (250ns) $4.25
2764 (200ns) $2.75
(250ns) $1.75

2732A (200ns) $2.95
*A version, programming is 21 volts
(250ns) $1.80
(300ns) $1.80
2732 (450ns) $2.85
2532 (450ns) $4.95
2716 (450ns) $2.15

8000's

7201	$7.25	8088	$8.75	8237A-5	$7.00	8279-5	$5.95
765A	$7.25	8088-2	$15.75	82C43	$4.50	8282	$4.95
7220D-1	$33.50	81C55	$4.95	8243	$3.50	8283	$4.95
8031A	$9.75	8155-2	$5.95	8251A	$3.50	8284A	$4.50
80C35	$5.95	8155	$3.25	8253-5	$3.75	8286	$4.95
8035	$2.75	8156-2	$6.95	82C53-5	$5.95	8287	$4.95
80C39	$4.50	8212	$1.60	8255A-5	$3.75	8288	$6.95
8039	$3.75	8214	$2.95	82C55A-5	$5.95	8289	$19.00
8080A	$2.95	8216	$1.60	8257-5	$3.25	8741A	$12.25
80C85A	$4.95	8224	$2.25	8259A-2	$5.95	8748	$9.00
8085A-2	$5.75	8226	$1.65	8156	$4.50	8749H	$12.00
8085A	$3.95	8228	$3.20	8259A	$4.95	8755A	$16.75

MATH COPROCESSORS

8087-2
$145.00

8087(-3)
$135.00

80287-3
$195.00

PRINTERS AND KEYBOARDS

*MADE IN JAPAN, HIGH QUALITY PRODUCT WITH ONE YEAR GUARANTEE.

SX-100 cps Printer
Special Price!!!
$189.00 each

SX-130 cps Printer
Special Price!!!
$199.00 each
(IBM Compatible)

SFK-201B Keyboard
(Capacity Type)
$119.00 each
(IBM Compatible)

Printer Cable (available at 6 ft. or 10 ft.) (IBM Compatible) $23.00
J RAM-2 Expansion Board for IBM PC or XT $190.00
J RAM-AT Expansion Board for IBM AT $225.00

I.C. EXPRESS

master charge

VISA

(Mon-Fri*8-5/Sat 9-3)
ORDER TOLL FREE
(800) 892-8889 Outside California • **(800) 882-8181** Inside California

CALL FOR CURRENT PRICES & VOLUME DISCOUNTS.

Price shown for UPS COD Cash. Mastercard/VISA Add 3% More. Prices are subject to change. Minimum order $10.00. California residents must add 6.5% sales tax. SHIPPING & HANDLING: UPS Ground $5.00, UPS Air $7.00 (under 1 lb.) ALL MERCHANDISE IS 100% GUARANTEED.

15358 Valley Blvd., City of Industry, CA 91746 Phone: 818-369-2688

Start-Ups: Riches And Ruin

By Matthew Leeds

A lot that goes on in computing is magical. Most of us never think about what goes on when we turn our computers on. The miracles that modern technology create inside that small box have become commonplace, accepted. The same thing is true of the software that we use. If it's good, we use it without a second thought; if it's bad, we curse the advertising that convinced us to purchase it, or the company that manufactures it. But we rarely think about those who created it, or the effort that went into designing, programming, packaging, and marketing it. This month I'd like to take a look behind the scenes, and show you a few of the back stage players.

The California lottery has started. Many of us hope to win big, and retire for life. It's a fantasy, but it's deeply ingrained into our culture. For many programmers, the software business is seen the same way. Create a dynamite program, sell a few hundred thousand copies, and get rich. And just like the lottery, we only hear about the winners, which, of course, reinforces the fantasy.

In 1983 Martin Marshall quit his job writing high-tech articles for *Electronics* magazine, bought a Commodore 64, and started a software company called Enlightenment, Inc. His product was to be a chess tutorial program. In less than a year he had run through his savings and gone $50,000 in debt. Two loans, one from a friend and one from a bank, tided him over into early 1984. Stock sales generated additional funds, but once again, in March of '85 the money was gone. Then the San Francisco *Chronicle* ran a profile on Enlightenment on the front page of its business section in the middle of March, and 15 new stockholders invested over $100,000. Total cash involvement in the company to date is over $175,000.

The program, *Paul Whitehead Teaches Chess*, is only the first product in a line of chess tutorials. It is unique in that at any point during the tutorial you may opt to play out the board position yourself, without finishing the tutorial. After over two years of work, Martin's efforts are beginning to be rewarded. Enlightenment's programs have reached the retail market and are selling well.

In the process of bringing his program to market, Martin was forced to deal with many sides of the business world: package design, financing, marketing, production, etc. Each step required finding a company to handle that particular need. What printing company should produce the box? Who should design the packaging? For a small start-up these questions were more than just an idle quest for the cheapest vendor; they were the start of a business relationship that could spell the success or failure of his entire effort.

While looking for disk duplication services, Martin found a company called Memory Chips. Founded by company president Richard Lavender, Memory Chips offered to handle more than just the duplication of program disks. They had the facilities to also assemble the packaging, shrink wrap it, store the finished product, and handle shipping to customers. This kind of service can be essential for start-ups.

Memory Chips, meanwhile, expanded its product line by offering blank disks to the public under the name of "Vanilla Wafers" for their 5¼" disks and "Mouse Bytes" for the 3½" disks. Their disks have been favorably compared to Dysan and Maxell in a major computer magazine's testing. It's important to remember that Memory Chips was a start-up just a few years ago.

Other start-ups are not so lucky. One of the biggest success stories in the software business has also been one of the biggest disasters. HesWare was one of the top suppliers of software to the home market, but ran into trouble in 1984. Cash flow problems left the company with excess inventory and no money to pay bills. After many attempts to find investors or merger candidates, the company finally has had to bootstrap itself back into business. With a dozen loyal staffers, HesWare has re-entered the market. Starting with a few best sellers from its old product line, and a new space station construction kit called *Project: Space Station*, HesWare is back. As Marge Terrian, Marketing Manager says, "rumors of our death have been greatly exaggerated."

The founder of HesWare has a new company, Solid State Software, another start-up. Jay Balakrishnan loves the software business with the dedication of a true believer. His company has two products on the market currently, a *1-2-3* look-alike for the C64, and a word processor for the 128. Both are excellent examples of quality software. The company support for these products is also excellent.

Product support is an important consideration. Sometimes the support can extend into areas that you don't expect. Batteries Included has decided to support those owners of its word processor, *Paperclip*, who have upgraded to the 128 by offering a $20 upgrade of their own. Send them your original program disk and dongle and they will send you a diskette with both the latest C64 and 128 versions of *Paperclip*, plus a dongle that will fit on the 128.

Hardware companies sometimes make mistakes. Witness the hard disk problems IBM AT owners have had. Of course, if you ask IBM about it you will get a blank stare. This kind of non-response can be fatal for a smaller company. Star-Micronics introduced a Commodore compatible printer called the SG-10C a few months ago. A lot of Commodore owners looked forward to it with great expectation, since all other Star products have been tremendous values, and solidly built. The SG-10C was, in a word, a turkey. Functionally it was a MPS-801 with a near letter quality (NLQ) mode. Since 801's are a glut on the market, new and used, and consumers look for better from Star, there were complaints. Lots of complaints. Star-Micronics listened. There will be an up-grade fix for the SG-10C. New ROM's for the printer and instructions on how to install them will be made available to all current owners, and all new printers will have the new ROM's installed at the factory.

Commodore has had its share of problems with hardware. The most recent revolves around the 1660 modem. Problems such as speaker buzz, incompatibility with 1650 software, and touch-tone loss are addressed (and solved) in issue #3 of *Input/Output*, Commodore's user group newsletter. Copies should be available from your local user group.

Lastly, for those of you who own 128's, and are running C64 software, there is a way to access the 10-key pad on the 128 in C64 mode. A program to allow this access was published in the Sacramento Commodore Computer Club's newsletter, SC3, of September '85. The author of the article was John F. Zacharias. Copies of the program are in the Public Domain library of the SFCUG, and will most likely be posted on local BBS's. □

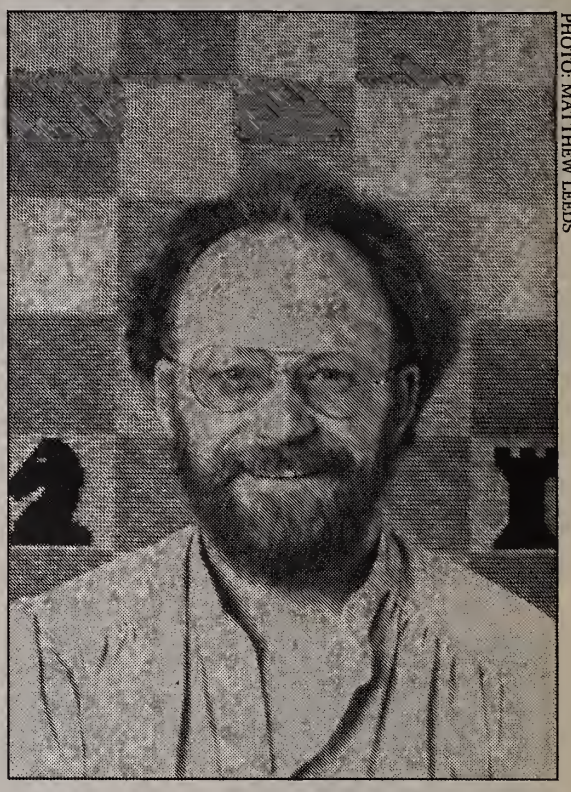


PHOTO: MATTHEW LEEDS

After some perilously rocky months, Martin Marshall of Enlightenment, Inc., is enjoying success with his chess tutorial program.

Matthew Leeds is a writer/photographer specializing in high technology. He has been involved with Commodore computers since 1983, and co-produced the Commodore Show in San Francisco.

Martin Marshall
Enlightenment, Inc.
1240 Sanchez Street
San Francisco, CA 94114

Richard Lavender
Memory Chips
927-A Lincoln Avenue
San Rafael, CA 94901

Marge Terrian
HesWare
390 Swift Avenue #14
So. San Francisco, CA 94080

John F. Zacharias SC3
10004 Vanguard Drive
Sacramento, CA 95827

Jay Balakrishnan
Solid State Software
1125 E. Hillsdale Blvd. #104
Foster City, CA 94404

Batteries Included
30 Mural Street
Richmond Hill, Ontario
L4B 1B5 Canada

Star-Micronics, Inc.
3031 Tisch Way #200
San Jose, CA 95128

Commodore
INPUT/OUTPUT
1200 Wilson Drive
West Chester, PA 19380

ONLINE FREEBASING

By Brock N. Meeks

It was an embarrassingly small crowd that showed up at the Improv one Monday night to see comic Robin Williams. The crowd was so small that Williams spent the first 15 minutes of his routine musing about crowds—or the lack of them — "So this is comedy hell." Suddenly Williams leapt from the stage, rushed to the front door, shouted "Free cocaine!" — then ducked.

Well, for all you "infomaniacs," I'm opening the door and yelling: "Free information!" We are going to cover some of the nation's best online databases. And they're free.

Without these free sources of information, infomaniacs are forced to:

- Mortgage the house (a second time).
- Pilfer the Christmas Club account (or Junior's college fund).
- Hock the VCR.

All this just to get enough money to pay for commercial information systems such as The Source, CompuServe, or Lockheed's ("just sign on the dotted line, Mr. Meeks") DIALOG.

Access to these services can cost anywhere from $6 per hour (oh, so seductive) to $200 an hour (which has tendency to cure an infomaniac in a short — if brutal — time). Help, however, is available. Yes, Virginia, there is still a free lunch; well, almost.

The Semi-Free Lunch

The only cost for these databases is a phone call — which any dedicated telecommunicator will tell you can be substantial. (I still remember the time my phone bill was delivered with complimentary blindfold and cigarette.) So open a buffer, and don't log on until the rates drop (and you wondered why your telecommunicator friends were always busy at night!).

Where I've provided a name and address, you will have to contact the name listed before you can access the system.

Electronic News

Clearpoint International News offers daily transcripts of news monitored from foreign news agencies. This is great for examining how the Brits or the Soviets (yes, Radio Moscow is monitored) are covering an international issue. (An Information Age alternative to Harry Reasoner.) Contact Clearpoint, POB 31577, San Francisco, CA 94131.

Weather information freaks (a sub-set of infomania) can get a quick fix from the U.S. Naval Observatory. With over 64 data files online, you can get information on sunrise, sunset, twilight and moonrise on a given day anywhere in the world. Ham radio operators (an ancient form of infomania) can grab the times transit satellites pass over a particular area during the upcoming 24 hour period. Fire up the modem and call (202) 653-1079, 300 baud, even parity.

We are going to cover some of the nation's best online databases. And they're free.

Save The Whales BBS

Greenpeace runs a BBS to handle its information network. Every wonder what your favorite whale watchers were up to? (It's a lot more than tracking Russian whalers.) You can get the full scoop by dialing up (415) 621-5492, 300 baud. Password: chavies.

Handicapped Hackers

Information about the disabled community is online at the Disabled Interest Group Experimental eXchange (DIGEX). This BBS has worked long and hard to become a nationwide clearinghouse of information on any issue regarding the disabled community. A ten meg hard disk holds files on legislative actions, publications, and new technologies for the disabled. Call (619) 454-8078, 1200 baud.

Waste Not, Want Not

The New Jersey Environmental Action Referral Service (NJEARS) is the cooperative network of two BBSs: RecycleNet and Apple to Eden. Both of these boards carry discussions and information about waste management and recycling options. A wide range of environmental issues are handled by online experts. Call (609) 641-9418, 1200 baud. A validated password is needed to post messages, use "feedback" section to apply for one.

Yuppie BBS

For all of you with discretionary income to invest, the Investor's Workshop is a free forum for learning the hows and whys of investing. The board's purpose is to educate beginning and seasoned investors in the stock, bond and commodity markets. It has a database that contains weekly updated advice files from expert stockbrokers, financial planners, and investment bankers. No buying and selling here, which I find comforting; just solid suggestions for getting serious with your money. Call (702) 438-1398, 300/1200 baud.

Make Mine Methanol

The Alternative Fuel Data Bank contains information on alternative fuels. There are bibliographies of relevant publications, synopsis of ongoing research activities, and discussions of the field's "hot" topics. Contact Russell Simkis, Bartelsville Energy Technology Center, POB 1398, Bartelsville, OK 74005. (918) 336-2400.

Node Code

OK, all you junior cryptologists (definitely not a sub-set of infomania), it's time to throw away your decoder rings. A BBS operated by the International Association of Cryptologic Research will more than satisfy your need for information regarding cryptology. The board carries a list of cryptologic conferences around the nation. There are article abstracts from professional journals as well. Call (703) 237-4322, 300/1200 baud, 6:30 p.m. to 7:00 a.m. and 24 hours on weekends. All messages are in uncoded ASCII.

Blast Off BBS

Space buffs take note. NASA's space shuttle program has its own BBS to give you daily information regarding the space shuttle program. GAS-Net (Get Away Special) focuses on discussion of the various experiments to be flown during each mission. Want to fly your own experiment? Here's the registration desk. The board includes all the available slots for flying an experiment over the next two years. In addition, a full roster of planned experiments is listed. There is a conference section where the experimenters hash out potential problems. Even if you're not interested in flying an experiment (which range in cost from $3,000 to $10,000 each) the board is great reading. Call (301) 344-9156, 300 baud.

Head Shrink BBS

TelePsych offers free information on psychological subjects, as well as online counseling (the counseling is on a fee basis). Dr. Timothy Miller, Ph.D, is a licensed clinical psychologist and acts as head resident. There are downloadable "pamphlets" on subjects such as how to stop smoking, computer addiction (infomania?!?), and how to choose a therapist. Call (209) 473-8296.

1200 Baud Fix

Those boards should keep a hard core infomaniac busy (for a couple hours at least). I think you'll enjoy them.

Did I miss your favorite? (Believe me, this list is far from exhaustive.) I'd like to hear about any of the specialty boards that you frequent (my online therapist tells me it's healthy to exchange such information). You can reach me at **MicroTimes**, or through one of the online addresses I listed in last month's column.

I'm outta here. Just talking about all this free information begins to make my fingertips tingle with excitement (ah Mom, you never told me about this). I'll catch you on the bitstream. □

Brock is a San Diego based freelance writer and a hopelessly incurable infomaniac. Contributions for his therapy sessions can be sent to MicroTimes.

MANAGEMENT

The HouseKeeper

Published by: *Aegis Development Inc.*
For: *Macintosh (128k minimum)*
Suggested retail: *$69.95*
Reviewed by: *Ken Goehner*

Ever since the release of the Macintosh, there has been a running debate over whether Mac is a home or a business machine. A point that seems to have eluded parties on either side of the discussion is that these days running a home, particularly a household that can afford a Mac in the first place, is a business in and of itself. And one of the key parts of any business is knowing what you have, where it is, how much it's worth, and who to turn to if it breaks or disappears.

To address this part of the business of living, Aegis Development, Inc. has created *The HouseKeeper* — an easy-to-use, pre-formatted, self cross-indexing inventory system for the home. Its primary purpose is to keep track of the vital information on physical household possessions and to aid in preparing lists for police reports and insurance agencies in the event of fire, theft, or loss. It does this and several other things very well.

HouseKeeper operates on a very intuitive level: on the top of the screen is the Menu Bar which features the familiar Apple Icon, File, and Edit options. There are also Chart, Report, and Options menus. I'll cover Report and Chart later. Under Options the important listings are Help and Insurance Info. Help is well written and self explanatory. Insurance Info is the space where you put your name and address of the property that you wish to cover in this file. The page is arrayed like a notepad with a dogear in the lower left corner. When you are done filling in your information, click on the dogear and there will appear a space for entering in information on your insurance company (address, phone, policy number, etc.). There are three pages for insurance companies, each assigned a number. These are important for keeping track of what property is covered by what company as you enter data into your file (if the item or property is uninsured, the default value is zero). Once you have entered this data you will not have to use this function again unless you change companies.

On the bottom of the screen are ten icons, or pictures, which represent nine different categories of household possessions and an overview that lists all properties entered into the program. The categories are: AUTO, JEWELRY, ART, TOOLS, RECORDINGS, ELECTRICAL, CLOTHING, FURNITURE, MISCELLANEOUS, and the entire HOUSEHOLD. At the top of the screen under the Menu Bar is the Data Entry Section. In the right and left top corners of this section the icon of the category selected is displayed, along with eleven Data Entry boxes. The boxes allow you to record the Item, Model, Make, Cost, Serial Number, Quantity, Cost, Invoice Number, Date of Purchase, Insurance (by number 0–3), Comments, and the Room (location of Item). To go from one box to another, you simply hit Return after entering the information. If you have no data for a given box, the program will assign a default value to that space; i.e. hitting return in the Date box will automatically cause today's date to appear, Cost will be entered as 0, etcetera.

Below the Data Entry boxes, but still in the Data Entry Section, are five "buttons" — Delete, Sort, Clear, Find, and Save. Once you have filled out the boxes to your satisfaction (the values entered can always be changed later), you simply click on the Save button, and the Item, Model, Make, and Room

***The HouseKeeper* allows you to keep a complete inventory of your possessions for insurance purposes.**

appear in the Scroll Box below. The boxes all empty themselves, making way for the next entry. If you decide not to save the information, click on Clear, and the boxes will again empty themselves, but no information will be entered into the Scroll Box.

The Scroll Box itself only shows eight items at a time, but as the name implies, it can be scrolled up and down by clicking on the arrows on the right side of the box (unlike most scroll bars, there is no slide box between the arrows). In order to retrieve all the information on a given item, simply move the mouse into the text section of the Scroll Box. The arrow will turn into a hand with a pointing finger, and when you point at the item you want, click the mouse button and the information will appear in the Data Entry section. From there you can change the data, or delete the item by clicking on the Delete button.

While in the Scroll Box, you can also mark items by putting checkmarks next to them. Once you move the hand to the left of all the text, it becomes a pencil. A checkmark is entered by clicking next to the appropriate item; it will appear in the upper right corner of the Data Entry section when information is called up on that particular item. This is especially useful for marking a group of items of special significance, i.e. stolen property, for a printout. Once an item is marked, you can get an on-screen list of all those items marked in any or all categories by clicking on the little square in the upper left corner of the Scroll Box (in other programs this is normally the "close box"). You can also list checked items by insurance company, but that list will only appear on a printout as accessed through the Report menu. The printout will not only list the items and their characteristics, but will ask for a title, print that at the top of the form, then your address, then the items, then the address etc. of the recipient of the list, and then a running total of the amounts listed at the bottom of each page.

There are two other ways of summoning up the information you may want on a given item or group of items. First, you can sort by specific entry by clicking on a Data Entry box, i.e., Cost, and then clicking on the Sort button. Everything will then be sorted by its ascribed value. Or you can invoke the Find button. Simply go to a Data Entry box, i.e., Item, and type in the item that you want. Then select the Find Button and all the items with that name will appear in the Scroll Box. You do not need to type in full names either. By entering "B," for example, the program will give you a list of all those things starting with "B."

There is also a Chart function that features two kinds of graphic breakdowns of your worldly possessions. First is the Pie Chart that breaks down your relative investments in terms of gross dollar amounts for the nine categories into which you have entered costs per item. Second is a 3-D Chart that regresses the proportional dollar amounts per category against the insurance companies (or lack thereof) that are covering your goodies.

The number of items that can be listed is limited strictly by the amount of disk space available. On the master disk — the one with the *HouseKeeper* program and the Apple systems folder on it, there's room for about 500 entries. A blank formatted disk has room for about 2000 entries, and a 20 megabyte hard disk can probably store enough data to keep Croesus himself satisfied. Because of the nature of this program, Aegis strongly advises that you keep a backup copy of your data (hardcopy and disk) in a safety deposit box. They also strongly recommend that you send in your warranty card. Upon receiving the card, they will send you a backup copy of *HouseKeeper* and keep you apprised of any new developments in the software package. In the event that the software is stolen or destroyed in fire, Aegis will be glad to send you a new package free of charge upon receipt of proof of purchase and a police report.

All in all, if you can afford to need a program like this, this is a program you can't afford to be without. (*HouseKeeper*, Aegis Development, Inc., 2210 Wilshire Blvd., Suite 277, Santa Monica, CA 90403, (213) 306-0735.)

EDUCATIONAL SOFTWARE

Algebra Word Problems

1: Motion
II: Area, Perimeter and Lever
III: Mixture Coin and Investment
Published by: *Microcomputer Workshops Courseware, 225 Westchester Avenue, Port Chester, NY 10573*
For: *Apple II (48K)*
List price: *$39.95*
Reviewed by: *Mike Markowitz*

"Jennifer has $1.75 in coins. Some are nickels and the rest are dimes. There are 20 coins in all. How many coins of each type does Jennifer have?"

Oh no, a word problem. Sweaty palms. Stomach cramps. Cardiac arrest. All the symptoms of math anxiety, that dreaded crippler of young minds. I used to tutor elementary algebra at a community college, and nothing in all of mathematics aroused the kind of fear and loathing that learners experienced with word problems.

You stare blankly at the page. You frantically scribble down numbers, draw little pictures of Jennifer and her stash of spare change. Add, subtract, multiply and divide. Chances are, you get lost trying to decide what "X" should represent. You bomb on another test, reinforcing a pattern of failure in math. You don't get into USC.

With luck you will find a tutor who can patiently and creatively model a way of thinking for you, leading you step by step through the process of analyzing the information available, translating

EDUCATIONAL SOFTWARE

this information into an equation, solving the equation, and finally stating the result in a way that answers the original question. Human tutors with the time and patience to do this are scarce. Fortunately, you can now find one on a disk for your school's Apple computer.

For the last four years, Microcomputer Workshop Courseware, a little outfit just north of New York City, has been publishing unusually fine math programs for a variety of personal computers. The series on Word Problems is particularly good, and badly needed. The programs ask for the learner's name, and provide constant encouragement ("excellent!" "exactly right!" "you got it!"). This is a simple gimmick, but it works. The typefaces and limited graphics are clear and attractive. The error trapping is superb. These programs will not let you fail. Errors are not just caught; you are led back to the exact information needed for understanding. A printer output feature makes it possible to dump out a complete error analysis for each completed problem, so that a busy teacher can see just where a particular student is weak.

The physical package is simple and functional: a small reinforced vinyl folder with a pocket for the disk (and free backup copy!) and a 12–16 page user guide. A collect phone number for support is provided.

The programs are copy protected, but replacement disks are free — a backup policy more publishers should imitate. The program provides its own on-line instructions and even the youngest learners should have no difficulty once they have overcome the "keyboard barrier." Nobody is born knowing how to use a keyboard, and the simple mechanics of entering numbers and letters is a major obstacle to computer learning for many people. I would recommend using these programs with a pocket calculator at hand, unless the learner is solid in arithmetic.

Algebra Word Problems is menu-driven. A good variety of problem types is presented, enough to keep the learner from becoming bored too rapidly. The program will accept any a·ithmetically correct expression of an equation, but may rearrange the learner's equation into a simpler form.

Educational software is not magic. An unmotivated, confused or severely demoralized learner can work through any program listlessly punching keys, and still fail the exam, because he or she has not internalized the material. The publishers of *Algebra Word Problems* insist that the programs "should be used in conjunction with classroom lessons and textbook readings. Teacher and student should use the error analysis and program feedback to assess the student's strengths and weaknesses and collaborate in developing an individualized strategy . . ."

I would recommend this series, however, not only for young learners struggling to master algebra for the first time, but also for adults who need to review this anxiety-ridden subject in preparation for an exam (like the GRE) or for further work in math.

Good educational software does not need bells, whistles and flashing lights—in fact the gimmicks can be a distraction for the learner and the software author. Effective courseware is usually the product of collaboration between teachers who understand the sources of the learner's frustration and confusion, and programmers who know the capabilities and limitations of their machines. The folks at Microcomputer Workshops Courseware seem to have solved this equation.

GAME SOFTWARE

Wilderness

A Survival Adventure

Developed by: *Dr. Wesley Huntress*
Designed by: *Charles Kohlhase*
Published by: *Electric Transit*
Distributed by: *Electronic Arts*
List Price: *$45.00*
For: *all Apple II computers; color monitor recommended*
Reviewed by: *Mike Markowitz*

Wilderness begins where my adventures with *Flight Simulator* usually end—with a plane crash:

> WELCOME TO WILDERNESS. YOU ARE THE SOLE SURVIVOR OF AN AIRPLANE CRASH IN THE SIERRA NEVADA, USA NEAR 38 DEGREES LATITUDE. THE TERRAIN IS VARIED WITH OCCASIONAL LAKES AND RIVERS. THE TIME IS 7:00 AM ON MAY 6. YOU HAVE NOT BEEN INJURED IN THE CRASH.

To survive this interactive adventure, you must reach the ranger station marked on your topographic map, somewhere in a 90- by 67-mile grid. But *Wilderness* is more than just a "hike simulator." It uses some highly sophisticated models of human endurance, nutrition and response to thermal stress. At any point, the terrain you see corresponds to your current position on the map. This neat trick requires its own operating system, trademarked under the name "Pangraphics." You can actually do a 360 degree slow "pan" to left or right and watch the terrain picture scroll. The effect is not perfectly smooth, and at the resolution of the Apple graphics screen the picture is somewhat stylized, but it is better than I have seen on some multi-million dollar military simulators.

The player can toggle among six different displays in the *Wilderness* system:

VIEW gives your current field of vision, usually mountains, trees and sky, with the occasional rattlesnake or cougar.

TOPO gives a display of your map, which can be enlarged for a closer look at smaller sectors.

STATUS gives a full weather report and a rundown on your state of health (energy, hunger, thirst, injuries or illness).

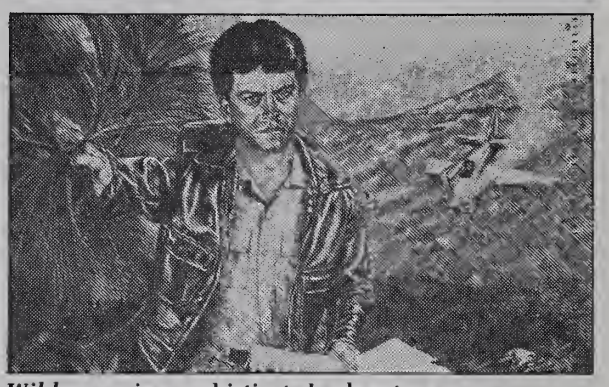
INVENTORY is a familiar function in all adventure games; it provides a list of everything you are carrying, wearing or using. Food and water are measured in ounces. There are realistic limits on the weight and volume of stuff you can haul around these mountains.

HELP is a last resort. At the cost of some points it can give you context-sensitive advice on the direction to follow or the most urgent immediate action required to survive.

Wilderness recognizes a 300-word vocabulary, but you are limited to simple verb-object declarations: USE AXE/MAKE RAFT/CROSS WATER. In the basic adventure, the player's main problems are land navigation and menu planning. (Hint: eat the most perishable food items first; save those candy bars and raisins for when the going gets tough!) The system will not let you hike off the edge of the map; you have to take another direction.

A great deal of flexibility is designed into the system. There is a "Lost City" scenario for Indiana Jones fans, and options to start the adventure at any season or time of day. You can select a "Research Mode" that makes you immune to the effects of hunger, exhaustion or injury. You can enter your own vital statistics (sex, weight, height, build, age, and resting pulse rate) and the system will realistically model your endurance and response

GAME SOFTWARE



***Wilderness* is a sophisticated adventure game.**

to environmental stress. You can even have the program generate a new TOPO map, varying the level of difficulty.

Documentation is excellent, including a hard-backed spiral-bound 115-page book (based in part on Air Force survival manuals) and a double-sided quick reference card, containing everything you need to get started. The package also includes an order blank for additional disks containing adventures in Bolivia, British Columbia, Burma, Chile and New Guinea at $19.95 each (or $34.95 for all five).

Chapters in the manual cover navigation, making camp, food and water, health and first aid, wildlife (leave it alone!) and future journeys (those five other countries). A complete vocabulary list is included as a priceless aid to the serious player, and there are some hints for using *Wilderness* in the classroom, if your school curriculum happens to include "the skills and problem solving techniques needed to survive in hostile alpine and tropical environments." A disclaimer on the back of the title page warns that *Wilderness* "is not intended as an exhaustive reference for identifying toxic plants or for preventing or treating injuries and illnesses," so the publisher assumes no liability for any mishaps.

Like most good adventure games, *Wilderness* allows you to save an adventure in progress to any formatted blank disk, and resume later from the same point. The system only recognizes one disk drive, so a certain amount of disk swapping is required. The system disk, which uses both sides, is not write-protected on either side, since the system is constantly updating information stored on the disk. This is, unfortunately, the only way to run such a complex simulation on a machine with only 48K of RAM.

There is no option to dump information to a printer. Strictly speaking, this is not essential to a good adventure game, but it would be handy to have a hard-copy of the map or the inventory list.

I hardly qualify as a survival expert, but it appears to me that the mechanics of getting wet and staying dry are oversimplified in *Wilderness*. The system allows you to swim long distances with full clothing and pack, something even Rambo would find quite difficult.

A phone number for product support is given in the manual. Back-up disks are provided to registered owners for a hefty $12. *Wilderness* is an impressive and highly professional product. It will appeal to adventure gamers, survivalists, Sierra Clubbers and gamers who are tired of crashing *Flight Simulator*. The team that created this richly detailed simulation deserves a more powerful microcomputer with lots of memory, a faster processor and first-class graphics to show off their talents. This would be a great conversion for the Atari ST or Commodore Amiga. (Electric Transit, 501 Marin St., Thousand Oaks, CA 91360.)

USER GROUP NETWORK

Our own **Bob Athey** and I braved the notorious Nimitz Freeway last month to visit the monthly convocation of the **SCKUG (Santa Cruz Kaypro Users Group)** at the kind invitation of **Dave Kirk.** While Dave hastened to explain that attendance was a little sparse because school hadn't started yet at UCSC, a fine time was had as Bob swapped useful hints and gleanings from past experience with the Kaypro enthusiasts. Thanks to Dave and the club for their hospitality, to say nothing of the GREAT Chinese dinner. And if you're a Kaypro user in the Santa Cruz area, Dave would like to hear from you at (408) 429-2324.

Also last month, the **FORTH**ians were out in droves at their annual national convention in Palo Alto. **Charles Moore,** creator of FORTH, addressed the assembled throngs in his traditional "Fireside Chat," saying that, "If you look at the probabilities of alternate futures, this is not a probable future." Wearing an oversized cowboy hat which, he said, "is to keep you from taking me too seriously," Moore allowed as how the language's popularity has finally reached the stage of exponential growth its founders fondly hoped it would attain 12 years ago. Indeed, if the convention was any indication, the FORTHians are a force to be reckoned with: booths displayed various FORTH-based software and literature, while convention-goers heard presentations on FORTH-related topics ranging from space exploration to artificial intelligence to medicine.

Speaking of programming language enthusiasts, we encountered some other such groups in our wanderings through last month's **Personal Computer Faire** in San Francisco. **APL (A Programming Language)** users are invited to joing the **APL-BUG** group — memberships are $20 per year — by writing **Paul Jackson,** I.P. Sharp Associates, 220 California St., Suite 201, Palo Alto, CA 94306. Also, users of the **Lattice C** compiler are encouraged to join the **Lattice C Users' Group.** In return for $30 a year, members of this group receive six 16-page (no advertising) newsletters a year, which deal with new ways to use Lattice C and information on the C language in general. Contact the group at P.O. Box 271965, Concord, CA 94527 for more info.

Bond Shands of the **KAY*FOG BBS** wishes to inform callers that, contrary to previous reports, the board is *not* operating at 2400 baud. Bond says he *did* have a 2400 baud modem, but it proved so defective that he sent it back whence it came. Bond continues to welcome 300/1200 baud callers at (415) 285-2687, and suggests that you write him at P.O. Box 11135, San Francisco, CA 94101 for registration info. He also recommends that if the line is busy on the BBS callers should try to get through at the new additional number, (415) 826-2131.

Orphan computer tales abound this month. **Woody McPheeters** of Berkeley asks us, a bit plaintively, "to start a new section under User's Group entitled **Dynabyte**, and carry the listing for a few months, enough to see if there will be some response. At present, I feel a bit lonely. I have one friend who owns two of the machines, and another who used to own one, but I'd like to meet and know more." So if you're an owner of a Dynabyte machine (which, Woody explains, is an orphan Z80 S100 computer), please contact Woody at (415) 548-3126, or write him at 3128 King St., Berkeley, CA 94703.

Yet another tale of woe comes from **Calvin Demmon** of Monterey, who's involved with **PLUG — the Plus/4 User Group.** The Plus/4, for those of us who missed it, was a nice machine made by Commodore and abandoned after less than a year, says Calvin. It has lots of good built-in software; what it *doesn't* have is much additional software or much information about the machine itself. PLUG, says Calvin, "has one purpose: to help Plus/4 users get the most out of their computers, in spite of Commodore's apparent decision to ignore us. PLUG's chief activity is a newsletter published eight times a year. Each issue of the newsletter contains user-written reviews of programs that will actually work on the Plus/4 and lists the names and addresses of the manufacturers. The newsletter also contains feedback from Plus/4 users about what they are doing with this neglected but exceptional little computer." Plus/4 owners, espécially those who are feeling a bit stranded, are invited to contact Calvin at Box 1001, Monterey, CA 93940. Membership is $20 per year, which includes a subscription to the newsletter and access to a growing public domain software library. (Calvin adds that PLUG doesn't have its own bank account yet, so please make checks payable to him.)

Last but not least among the orphan computer groups, **Robert Brown** of the **Gavilan Users Group** (a Special Interest Group of the **Silicon Valley Computer Society**) sends along the "Gavilan Autobiography" of this true phoenix among computers. Since Gavilan's demise some time back, vendors, ex-employees and other enthusiasts banded together for mutual support. As a result, there's a national network of local groups, repair facilities and bulletin boards that's kept the machine alive for seven years after its parent company's collapse. Best of all, after a constant process of information exchange, modification and development, there's now available what Robert calls the "NEW Gavilan Portable." This gem is modified to fit each user's needs, is expandable to 384K plus a 58K RAMdisk, has all Gavilan accessories, can accommodate a 20 meg hard disk, has 8-16 line LCD display with 25-line CRT capability, and uses over 70 major MS-DOS programs — all for $600. Gavilan users unaware of this available resource or desiring more information are requested to contact Robert at (408) 379-2774, or write him at 780 Manx Ave., Campbell, CA 94008.

Eric Timmorn of Van Nuys writes in to introduce his **Speak Easy BBS,** a 300/1200 baud system running since April 1984. Topics of discussion range from specific machines to role playing games; features also include a dating service, E-mail and more. Eric adds, "The software [which was written especially for this board] allows you to customize it to your terminal (such as clear screen and upspace characters). So almost any computer or terminal can call SECS. Because of the high cost of operations, we charge $0.50 per month (just to pay the bills!). Most people just send $5 – $10 in advance. This works somewhat better than the flat-rate donation, since users can send in variable amounts. There you have it! Our number's (818) 905-6262 and we're located in Van Nuys, California."

Meanwhile, not far from Eric, **Ruth Stever** of Burbank announces the foundation of the **Mac Valley Users Group,** a friendly group of Macintosh devotees with a broad range of experience levels, applications and activities. Novices are heartily encouraged to join. Meetings are at Burbank High School Cafeteria, Burbank Blvd. and 3rd St., Burbank, on the third Tuesday of the month at 7:30 pm. Membership is $20 a year. Ruth welcomes inquiries at (818) 848-1277 or P.O. Box 4297, Burbank, CA 91503.

Finally, **Dr. B. "Flash" Gordon** of the **Haight Ashbury Free Medical Clinic** came by our booth at the **Byte Show** and asked us to get the word out that the clinic is looking for a donation of a letter-quality printer (slow is ok). It seems that some kindly soul has already given the clinic a Columbia computer, but it would be a lot more useful if they had a printer to handle the reams of correspondence the clinic generates. So if you have an old lq printer you're not using, or if you'd like to repay those nice medics who helped you out at some Bay Area rock show over the last twenty years, contact B. "Flash" Gordon, M.D., Medical Director, Medical Section, Haight Ashbury Free Medical Clinic, 558 Clayton St., San Francisco, CA 94117. Or call him at (415) 431-1714.

Keep those cards and letters coming in to Micro-Times User Group Network, 5951 Canning St., Oakland, CA 94609. See you next month. □

Calendar Of Events

October 16 — XT Compatible Club, San Francisco, demo on how to assemble an IBM-XT Compatible for under $950. (415) 668-0913 for info. Meeting 7 p.m., Lincoln University, Turk and Masonic, SF.

October 17 – 19 — Conference, "Computer Technology And Persons With Disabilities," Cal State University, Northridge, 18111 Nordhoff St., Northridge, CA 91330. (818) 885-2578 for info.

October 18 – 20 — Santa Rosa Computer Festival, "Technology For Business And Education," Luther Burbank Center, Santa Rosa. Free seminars. Contact Michael Judah, (707) 545-1414, or Ron Person, (707) 579-2603.

October 19 — Computer Swap, San Mateo County Fairgrounds, Fiesta Exhibit Hall, 2495 S. Delaware, San Mateo, CA. (408) 266-978-SWAP for info.

October 19 — "Project Management With Micros," conference, Sheraton Palace, San Francisco. Contact Aline A.C.E. Adalpe, (415) 567-8314, or write State of the Art Computer Conferences/ Shows, 2841 Baker St., San Francisco, CA 94123.

October 19 – 20 — Computer Sellathon and Expo, Shrine Exposition Hall, Downtown Los Angeles. Call Bernie Weiss at (818) 905-5476 for info.

October 20 — "Current Issues In Information Systems Protection" conference, Holiday Inn, 750 Kearny St., San Francisco, CA. (415) 953-5586 for info. Sponsored by Bay Area Chapter of the Information Systems Security Association.

BULLETIN BOARDS

Kay*Fog RBBS. A system designed for novice callers. No fees, but registration required. PO Box 11135, San Francisco, CA 94101. Sysop: Bond Shands. (415) 285-2687, (415) 826-2131. 300/1200 baud.

Napa Valley RBBS/RCP/M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

BULLETIN BOARDS

Bay Area Atari Users Group 24 hour BBS (408) 578-2390.

The Bay PBBS 300/1200 Baud full duplex. 24 hrs., 20 megs online. Apple super-32 computer section, excellent Macintosh/Apple II downloads. (415) 775-2384. Easiest to get through in the mornings.

CAN YOU SURVIVE LORD BRITHISH'S NEWEST CHALLENGE?

Call TOLL-FREE 800-223-8327

5¼" Diskettes

	Retail Price	Our Price
Maxell/Verbatim SS/DD Box of 10	$40.00	**$19.95**
Dysan SS/DD (Box of 10)	$50.00	**$20.95**
Maxell/Verbatim DS/DD Box of 10	$50.00	**$23.95**
Dysan DS/DD (Box of 10)	$60.00	**$24.95**

3½" Diskettes

Sony	$60.00	**$26.00**
Maxell/Verbatim	$60.00	**$26.00**
Memorex	$60.00	**$26.00**

5¼" Diskettes

Xidex SS/DD (Box of 10)	$40.00	**$12.95**
Xidex DS/DD (Box of 10)	$50.00	**$15.95**

Generic Diskettes

5¼" Generic Diskettes SS/DD (Box of 25) **$24.95**
5¼" Generic Diskeettes DS/DD (Box of 25) .. **$24.95**
3½" Generic Diskettes SS/DD **$22.00**

Broderbund Software

	Retail Price	Our Price
Printshop Ap/C-64	$49.95	**$34.95**
Graphics Lib.#1 Ap/C-64	$24.95	**$19.95**
Graphics Lib.#2 Ap/C-64	$24.95	**$19.95**

These programs let you design and print your own greeting cards, stationary, announcements, etc.

BriteStar™

Enhances your creations on Printshop & Printmaster

Value Pak **$18.95**
100 sheets of Blue or Gold or Red with 48 matching envelopes with 48 clear mailing labels. Two for **$35.00**

Spectrum pak **$17.95**
30 sheets of Blue, Gold and Red with 36 matching envelopes and 36 clear mailing labels Two for **$30.00**

BRITESTAR COLOR RIBBONS
Available in Red, Blue, Green, Purple, Brown, Yellow, Orange, Silver
(Epson/Imagewriter) **$8.95**
6 or more $6.95 ea.

ORIGIN SYSTEMS

ULTIMA IV
Apple

ULTIMA IV is the awaited sequel to Ultima III The Quest of the Avatar is a quest to final frontier - the self **$41.95**

ULTIMA III
Apple

ULTIMA III sends you on an incredible role playing through monster plagued Sosaria in search of the elusive Exodus **$41.95**

Mindscape

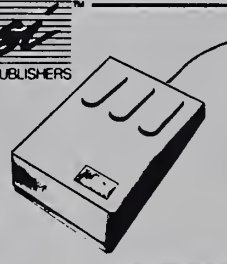
Halley's Project

A mission in our solar system.

	Retail Price	Our Price
C-64	$39.95	**$31.95**
Apple	$44.95	**$35.95**

Infocom SOFTWARE PUBLISHERS

PC Mouse with PC Paint Brush



Retail Price	Our Price
$220.00	**$140.00**

NEW ARRIVALS

		Retail Price	Our Price
Fokker Triplane Flight Simulator (PBI)	MAC	59.95	47.95
MacDraft (IDD)	MAC	250.00	200.00
Mouse Stick (Video 7)	MAC	59.95	47.95
Side Kick (Borland)	MAC	84.95	67.95
Mac Fortran (Microsoft)	MAC	295.00	236.00
Jet (Sublogic)	IBM	49.95	39.95
Quick Basic (Microsoft)	IBM	99.95	79.95
Operation Market Garden (SSI)	AP	49.95	39.95
James Bond—A View to Kill (Mindscape)	AP	39.95	31.95
Otherside (Tom Snyder Productions)	AP	69.95	55.95

*We are the Bay Area's most complete software outlet with hundreds of software disks in stock and thousands more available. Come and see our line of **software** and **peripherals** for Macintosh*, Apple*, IBM*, and Commodore*. If we don't have it, we can get it **fast.***

SOFTWARESOLUTIONS

*Trademarks of respective manufacturers.

11185 San Pablo Ave., El Cerrito 94530 **(415) 237-5257**

Hours: Monday through Saturday 10:00 a.m. to 6:00 p.m.

USER GROUP NETWORK

BULLETIN BOARDS

TI BBS 300 baud, 24 hours. All systems welcome. Free. 4 message bases, large data base on various subjects. (415) 994-4877.

BAKUP (Bay Area Kaypro Users and Programmers) (415) 223-2237 RBBS & RCP/M — Must be a member of BAKUP, P.O. Box 20181, Oakland, CA 94620.

NCR BBS of Northern California (408) 744-0556. Bulletin board for all users of NCR microcomputers (PC-4 and Decision Mate V). Learn more about NCR's microcomputers. Contact Lee Sherman or Jim Chandler, 756 San Aleso Ave., Sunnyvale, CA. (408) 743-4933.

SIMMS (Silicon Valley Interchange) 4000 files on line. New releases, communications, and utilities for CP/M based computers are available on a nonprofit public-domain, 24 hour remote CP/M system. The SiMMS (Silicon Multiple Message System) Network Headquarters runs on a CompuPro 816 with 40 megabyte hard-disk drive. The Modem number is (408) 732-9190. To register, send a six-digit password and $25 to SiMMS Headquarters, Silicon Valley Interchange RCP/M Registration, Box 532, Cupertino, CA 95015. Sysop: Ed Svoboda Jr.

MBL Referral System BBS A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 6 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mel.

Sports for the serious fan! Latest scores, transactions, injuries and updates, plus the complete betting line for all NFL games, as well as baseball, basketball, hockey, horse racing, and boxing news and results. For personal I.D. and access code and more information, send your name, address and phone number to California Sports Book, 3550 Cattonl Court, Union City, CA 94587, or call C/S/B BBS at (415) 471-3591.

ROOTS—BBS. Available 24 hours, 7 days a week, supports 300/1200 baud at 8/N/1. Specializes in genealogical info with messages, upload and download of CP/M, DOS, Apple software. Sysop: Brian Mavrogeorge. (415) 584-0697.

Vortex BBS. (916) 481-0194. 24 hours, 300 baud. Pamela Lunsford, sysop.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

Welch Net II. A public FIDO BBS. Message areas devoted to Turbo Pascal programming and Seequa Chameleon computers. Available 23 hours/day. (415) 391-9148.

The Man O'War, (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

The General Store Public Domain Programs. Computer industry and computer product information. Hundreds of diverse public domain programs including science, music, education, games, financial, and business programs for the Apple computer. Easy to use. 300 baud, 9 am - 12 pm, (415) 851-4497.

BULLETIN BOARDS

Fantasy Factory BBS. Fantasy Factory of Pacifica. IBM and compatibles oriented, but all welcome. 300/1200 baud, 8 bit, no parity, no fees. (415) 355-6047. Sysop Ev Cheney.

Pro Bono BBS (TM) is a public interest board with file areas devoted to legal self-help and education, landlord/tenant relations, financial and tax issues. Modem line is (408) 372-8737. Events and meeting information for several Monterey Bay user group events are posted on the message board.

Software First BBS 24 hrs., 300 baud. (415) 459-1544 Marin, (707) 579-1478 Sonoma. 5 boards - restaurant, sales, Amiga, ST, general E-Mail, monthly specials on hardware, software, peripherals.

Bay Connextion BBS (415) 621-7561, 9pm - 9am. 300/1200 baud at 8/W/I. Macintosh Software, Classifieds, Personals, Sexual Freedom, and Star Trek. Claude Wynne, sysop.

Silicon Valley Sysop's Exchange. Merlin's Castle BBS (300 baud only), (408) 578-1563. Sharks Head BBS (300/1200 baud), (408) 247-4810. The Man O'War (300/1200 baud), (408) 243-2370.

Northern California L5 BBS Morgan Hill, CA, (408) 778-3531, 300/1200 baud, 24 hours. Supports the L5 Society in promoting the development of space.

Gamenet Bulletin Board System. BBS is devoted 100% to gaming subjects. 24 hours, 20 boards, 10 D&D/RPG boards, Alkahest, professional book reviews. Unending Story, Adventurers' Training Ground, Game Hint, etc. Sysop: L.J. Phone: (213) 541-8039.

The Consultant's Exchange BBS Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Aware II (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc.

Junkyard Data (213) 867-9541. Multi-interest board in Norwalk with everything from jokes and for sale items to reviews (movies & software), trivia questions, an adults only section, etc.

Marina Matchup (213) 397-6300. This Mar Vista-based dating board operates with Martian software.

Lynzie's Motherboard North Hollywood; multi-interest board with public boards, entertainers exchange, job exchange info. Runs on IBM-PC with 10 mb storage, operates on Martian Software, runs 24 hours a day. (818) 508-6482.

Bulletin Board System. BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

BULLETIN BOARDS

Videodrome BBS. Where computers and video meet. (213) 324-5882. Open weekdays 4 pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

HUG1. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. (213) 874-8256.

The Agency BBS. 300 baud. Free. All systems welcome. 16 message bases large data base of over 100 files on various subjects. Special areas for special interests such as gaming, business programs, and MIDI (Musical Instrument Digital Interface). 24 hours. (818) 794-5001.

The Wargames RBBS. Call today for one of the best IBM BBS's around. Features include up/downloading, discussion, E-mail, latest PC News and many other surproses. Hours: 7:30 am - 11:30 pm. Sysop: Jason lin. 300/1200 baud. (213) 393-9777.

The Audiophile Network. A databoard system for the music lover and audiophile. 24 hours, 7 days, unless down for repair. (818) 988-0452. (818) 782-1676 (voice) for info.

Speak Easy BBS. 300/1200 baud, runs on an IBM-AT with 26 megabytes. UL/DL with Xmodem, games, 20 message bases, dating service (questionnaire), voting booth. All computers invited!

BULLETIN BOARDS NATIONAL

The Dead Board (717) 334-8680, 24 hrs., 8 bit word, 1 stop bit, no parity, 300 baud. Grateful Dead tape trading and info; space for bulletins, ads and public mail.

ASSOCIATIONS

Computer Professionals for Social Responsibility. The LA chapter is interested in computer reliability and preventing nuclear war, the socially useful direction of computer research, and similar topics. They meet the third Monday at 7:30 pm at the Nuclear Information Center, 1431 Ocean Ave., Suite B, Santa Monica. Phone (213) 747-3219 for more information.

Organization of Professionals, Educators, and Novices (OPEN). Tutorials, random access period, feature presentation, public domain library, and CP/M literature are all part of the monthly meetings of Osborne owners/users and MS-DOS transportables. Club BBS and newsletter. Call Frank L. Christ at (213) 498-4186 for more information. Meetings at Learning Assistance Center, CSU Long Beach, 3rd Wednesdays, 7 pm.

The North Orange County Computer Club This group is the largest and perhaps the oldest in the county. It is affiliated with a large number of special interest groups and offers something for just about every user. General meetings are usually the first Sunday of every month in the Hashinger Auditorium, Chapman College, Orange. For info, call (714) 998-8080.

ASSOCIATIONS

The South Orange County Computer Club A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Costa Mesa. Meetings begin at 7:00 P.M.

California Software Electronic Consultants (CALSEC) California Software and Electronic Consultants Network. Support Groups — Workshops — Legal Referral — Newsletter. $30 Membership or SASE to CAL-SEC, 3046 College Ave. #4. Berkeley, CA 94705.

Community Entrepreneurs Organization (CEO) Business networking group meets around SF area. Invests in new products, markets, brainstorms. Share info. on tech and non-tech business issues. 4 meeting locations, various week nights. Contact Dr. Crandall, P.O. Box 2781, San Rafael, CA 94912. (415) 435-4461.

Computer Professionals For Social Responsibility P.O. Box 717, Palo Alto, CA 94301. (415) 322-3778.

Computer Professionals For Social Responsibility (East Bay) 902 Rose Ave., Piedmont, CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

FOCUS-MED (Federation of Computer Users in Medicine). Open to all physicians and health professionals. Practice management consultant registry. (415) 626-4600.

FOCUS-DDS (Federation of Computer Users in Dentistry). Open to all dentists and dental professionals. Practice management consultant registry. (415) 626-4600.

ITRA Independent Technical Representative Association is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. #609, San Francisco, CA 94102, (415) 421-4872 for meeting time and date.

MCTUG (formerly Marin County TRS-80 Users' Group). MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

PRACSA (Public Remote Access Computer Standards Association) offers to clubs, schools, and user groups a Speakers Bureau. The purpose of the bureau is to act as a resource to these groups in obtaining speakers of high quality for their meetings. The volunteer speaker is provided free to the group. Contact (408) 262-5150. Meetings 4th Wednesday, 7 pm, Vadic Cafeteria, 222 Caspian Dr., Sunnyvale.

San Bruno Computer Club. Meetings Wednesday 7:30 pm. Call Pete Testart, (415) 952-9309 for information.

San Francisco Computer Society (Formerly the San Francisco First Osborne Group). A society for users of portable computers and/or the CP/M operating system. P.O. Box 783, San Francisco, CA 94101-0783. Meetings on fourth Thursday of the month, St. Aidan's Church, Diamond Heights and Goldmine Dr. in SF. All are invited. Dues $10/yr.

ASSOCIATIONS

FUN (Friendly Users' Network). A new social and business network for computer people. For information call (415) 567-4448.

Software Entrepreneurs' Forum, PO Box 61031, Palo Alto, CA 94306. (415) 854-7219.

PATCA (Professional & Technical Consultants Association). 1330 S. Bascom Ave., Suite D, San Jose, CA 95128. (408) 287-8703.

BAYMUG. Bay Area MicroProcessor User Group. General computer group, mostly CP/M and S100. All types of interests welcome. Celebrating our 10th year of meetings! Meetings 1441 Rolins Rd., Burlingame, CA, 1st Thursday, 7:30 p.m. Contact Victor K. Bailey, P.O. Box 248, Pleasanton, CA. 94566. (415) 462-4442.

NATIONAL/ INTERNATIONAL

Network Users Association. 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

TPUG World's largest Commodore Users Group. $25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon — Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 1912A Avenue Rd., Suite 1, Toronto, Canada M5M4A1.

Apple Co-op 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

MicroPro Users Group of America. National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

Franklin Users Group International. Supporting users of II, II+, Franklins, and all compatibles. We support all members with a monthly newsletter, "The Clone Ace," a growing public domain library and personal attention. Membership $15.00 a year. Contact Douglas M. Trueman, EastWind Apt. L77, Tecumseh, MO 65760.

68796 Hackers. 68796 (68000 + IEEE-796) is the only users group supporting hobbyists constructing WICAT 150/Minisystem, Multibus, and 16/32 bit systems. In addition to the 68796 Hacker's Newsletter, we are putting together a disk library. Dues $20/year. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94062. (415) 851-7031.

Golden Apple Club, Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, — 35100 Padua, Italy.

NATIONAL/ INTERNATIONAL

F.O.G. 15,000 member group supporting all CP/M users. Dues of $24.00/yr. include 60-80 pg. FOGHORN monthly's access to 270+ disk library, 40+ RCP/M systems, and back issues; and a technical support hotline. All meetings conducted by 140+ local groups. Gale P. Rhoades, P.O. Box 3474, Daly City, CA 94015, (415) 755-2000.

USER GROUPS

ADAM

Adam Users of Southern California. Come and keep the ADAM going. We have access to some of the people who developed software for ADAM and we are going to create a base for tips, reviews, and a BBS. Get on line with ADAM. Meetings at Airport College Center, Sepulveda and Century, 4th Sunday, noon. Contact Harvey Klein, 1736 S. Bedford, LA, (213) 553-1062 or Paul Shecter, 5545 Lindley, Tarzana.

ALTOS

Altos User group forming in West LA area. Contact Margaret Beemer, History Department, UCLA, Los Angeles, CA 90024.

APPLE

The Orange Apple Group All Apple owners are invited. Members are knowledgeable on many usages of all types of Apple machines. Meetings are on the first Saturday of every month from 9:00 to 12:00 a.m. For info, call (714) 897-8943.

South Bay Apple III User Group Over 85 Apple III users share information, programs, group purchases, product demos. Special interest groups meet 1st Tuesdays. General meetings on IIIrd Tuesdays at 7:30 p.m., UCLA Harbor General Hospital, Room III. Corner of Vermont and Carson, off 110 Fwy. Contact Gary Fortune, P.O. Box 432, Redondo Beach, CA 90277, (213) 316-7738.

Pasadena Apple Users Group (PAUG) Meets at Century Federal Savings, 199 North Lake Avenue, Pasadena, CA (corner of Lake and Walnut). Enter from the parking lot side. Take the elevator to the basement. The bank unlocks the doors at about 7:15 pm and the meeting starts at 7:30. No dues, new members welcome.

Wabash Apple Users Group Product demos of software and peripherals, discussions, help from experts. Public domain library. Meets twice a month at the Burbank Public Library, 110 N. Glenoaks Blvd., Burbank. Some months there are *no* meetings, so call Marie Kaden for information: (818) 846-6682.

San Francisco Apple Core Meets every third Saturday of the month at Fort Mason, Bldg. C, Room 100 at 10 am. New products and innovations are featured for Apple II, Apple III, Macintosh and Lisa. Public domain library, SIGs, tech help, newsletter. $20 per year membership. Info: SF Apple Core, 1515 Sloat Blvd., Suite 2, San Francisco, CA 94132. (415) 566-2342 (voice), (415) 474-8608 (BBS/modem).

SPCA (Society For The Prevention of Cruelty To Apples) The Society for the Prevention of Cruelty to Apples is a club for owners of Apple, Apple-compatible (Franklin, etc.) and

Up Your Mac™ With A 512K or 1, 1½, or 2 Megabyte Ram Upgrade

We ship you a complete, reworked board!
Use our tools to swap boards and return the old one to us.

The VOAD Advantages:

- No loss of use
- No shipping your MAC™
- 120 day warranty
- FREE Mac Memory Disc™
- Immediate Availability
- Big Savings on 1024K

Dealer Inquiries Welcome

VOAD SYSTEMS™

3304 Pico Blvd.
Santa Monica, CA 90405

Place Your Credit Card Order By Phone:
Call Us, We'll Ship C.O.D.
(213) 450-2929

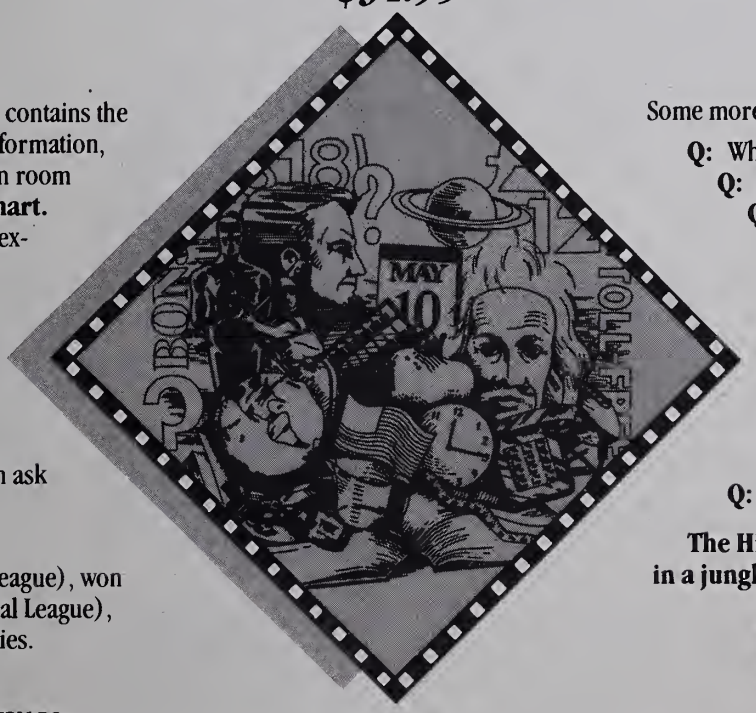
™ MacINTOSH is a trademark of Apple Computer, Inc.
™ Mac Memory Disk is a trademark of Assimilation Inc.

Dates ■ Presidents ■ Historical Trivia ■ Longitudes ■ Latitudes ■ Capitals ■ Distances ■ Populations ■ World Time Zones ■ Foreign Telephone Codes ■ Postal Abbreviations ■ Tricky Spellings ■ Lots More ■

THE EXOTIC HIPPO ALMANAC

It understands English, thinks fast, and knows over 35,000 useful, intriguing facts.

$34.95



Solid. The Hippo Computer Almanac™ contains the equivalent of more than 500 pages of information, highly compressed on disk. There's even room for you to add personal information. **Smart.** It uses an A.I. language parser and contextual processing to understand questions in plain English. **Swift.** This unprecedented reference tool performs calculations and answers questions faster than you can look them up.

A glimpse of the many questions you can ask the Hippo Computer Almanac:

Q: Who won the World Series in 1923?
A: The New York Yankees (American League), won against the New York Giants (National League), 4 games to 2, in the 1923 World Series.

Some more sample questions:

Q: What is the area code of Denver?
Q: What is 20 km/liter in miles/gallon?
Q: What is the monthly payment on a $7000, 14% annual, 4 year loan?
Q: How many calories are in an apple?
Q: How many Mexican pesos is a US dollar worth?
Q: What is the toll-free number for Apple Computer?
Q: What is the time now in Tokyo?
Q: How do you say "hello" in Japanese?

The Hippo Computer Almanac. A rare beast in a jungle of primitive programs.

Available for Apple Macintosh, Atari ST, and IBM PC.
See your local dealer,
or contact Hippopotamus. VISA and Mastercard accepted. California residents add local sales tax. Please include $5.00 for postage and handling. Allow 1–2 weeks for delivery. Macintosh is a trademark of Apple Computer, Inc. Hippo Computer Almanac is a trademark of Hippopotamus Software, Inc. Price, availability and specifications subject to change without notice.

HIPPOPOTAMUS™ SOFTWARE, INC.

© 1985 Hippopotamus Software, Inc.
985 University Ave., Suite 12
Los Gatos, CA 95030
(408) 395-3190

Loan Calculations ■ Sports ■ Awards ■ Astronomy ■ Calories ■ Over 1000 Toll-free 800 Numbers ■ Area Codes ■ Foreign Country ■ 34 Languages ■ Over 400 Unit and Metric Conversions ■ Formulas ■

DEALERS - WE HAVE IT ALL!

In Stock • Lowest Prices • Best Quality
Call Us Now!

PERIPHERALS FOR IBM PC/XT

XT 8 Slot 256K IBM Compatible Mother Board (0 K)
XT 8 Slot 640K IBM Compatible Mother Board (0 K)

Monochrome/Graphic/Printer Card (720 X 348 Graphic Mode, 64K, can run Lotus 1-2-3, Symphony, etc)

Color Graphics/Monochrome/Printer Card (Color Card or Monochrome function on 1 board) Color Graphics Card

384K Multifunction Card (with cables, 0K) (Parallel/Serial/Game/Calendar/Clock/Memory expandable to 384K, RAM-DISK, SPOOLER)

Multi I/O Card (Floppy controller/Parallel/Serial/Game/Clock/Calendar)

Floppy Controller Card (with cable and external port, can support 4 drives)

512K RAM Expansion Card (0 K)
384K RAM Expansion Card (0 K)
256K/256K RAM Card (0 K)

Game Card (two joystick port) Clock/Calendar Card

RS232/ASYNC Communication Card
Parallel Printer Card
RS232/Parallel Printer Card
RS232/Clock Calendar Card

PERIPHERALS FOR IBM

5151 Compatible Keyboard for IBM PC/XT
5150 Compatible Keyboard for IBM PC/XT (w/enlarged RETURN key)
AT Compatible Keyboard for IBM AT

Cabinet for IBM PC/XT Compatible (Slide or Flip-Top) Cabinet for IBM AT Compatible

130W Power Supply for PC/XT (ETRI fan, 4 drive connectors, 110V/220V)
192.5W Power Supply for IBM AT Compatible

Parallel Printer Cable — 10FT (10 pcs min.) (UL approved cable)

PERIPHERALS FOR APPLE

Disk Drive — Full Height
Disk Drive — Half Height

Z80 Card

80 Column Card
80 Column with 64K RAM for APPLE IIe
40-80 Column Switch

16K RAM Card

Parallel Printer Card (with cable)

RS232 Communication Card

Disk Drive Controller Card

Super-Quiet Cooling Fan for Apple II +, IIe (UL approved fan w/Surge Protector)

SUPREME CO.

1630 Oakland Rd., A103
San Jose, CA 95131

(408) 971-6400

FREE
USER GROUP LISTINGS

MicroTimes is a new, free computer magazine with a current monthly distribution of 100,000 copies in Northern and Southern California. In addition to interviews, features and reviews, we offer a free listing service to user groups, bulletin boards and computer associations. Let us hear from you. Use this coupon for your listing, and feel free to include any additional information for our newsreels column. Please send us your listing by the third week of the month *preceding* the issue in which you want your first listing to run.

User group name _____

Contact name _____

Address _____

Phone number _____

Text of ad _____

_____

_____

_____

_____

Meeting address _____

Meeting time and date _____

Mail to: **MicroTimes User Group Listings**
1800 N. Highland #220
Hollywood, CA 90028

or

5951 Canning Street
Oakland, CA 94609

USER GROUP NETWORK

APPLE

Macintosh personal computers. It meets at 7:30 pm on the last Wednesday of the month at Thornton Jr. High School, on Thornton Ave. at Dusterberry, in Fremont. Contact SPCA Publicity Chairman Milton Buck, 5246 Channel Drive, Newark, or call (415) 794-2822 for more info.

Association of Apple 32 Users Macintosh, Lisa. An association of "knowledge workers" who wish to share information on products, applications, and events. User-developed, non-copyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

Apple Eaters Users Group. Apple II users group meets monthly (first Thursday) at Hayward Software Centre. Operates, with San Leandro H.S., a 24 hr. free BBS at (415) 577-3409. Meetings 22406 Foothill Blvd., Hayward. Contact Bob Shayler, 2200 Bancroft Ave., San Leandro, CA 94577, for more information.

Pen Apple. Pen Apple Users Group meets 2nd Thursday of each month at AMPEX cafeteria, 7:30 pm, Redwood City. Draco Bulletin Board. Contact Karl Shores (415) 366-0339.

Diablo Valley Apple Users. Meets 3rd Friday of each month at EMS, 2371 Stanwell Dr., Concord, at 7 pm. Contact Lynn Hart, P.O. Box 5031, Concord, CA 94524, (415) 798-9281.

AT&T

AT&T 6300 West LA: AT&T 6300 or 8086 compatible (desk pro) group forming. Contact Miles Hillis, (213) 472-3522, leave name and interest.

ATARI

Atari Computer Association of Orange County (ACAOC). Join one of the biggest Atari user groups in Southern California. Monthly magazine, large public domain library, and BBS privileges for members. Dues $24.00/yr., $18.00 for non-attending out-of-town members. Meetings at Golden West College, Room 123, Huntington Beach, CA 92647, 4th Sunday of each month, 1-5 pm. BBS: (714) 731-6523.

West LA Atari Users Group. Come join fellow Atarians! Dues are $20.00/year. Newsletter, P/D library, ATR-Sig, discounts, guest speakers. Please call for directions to meeting room! If you're reading this, you belong with us. Meetings first Wednesday of the month, 7 pm, Paul Revere Jr. H.S., 1450 Allenford Dr., Brentwood. Call John Scheid, pres., for more information (213) 829-7239.

Los Angeles Atari Computer Enthusiasts (LAACE) meets 2nd Mon./mo. at 7:00 pm at Granada Hills High School, 10535 Zelzah Ave., Granada Hills, CA. Contact Bob Keimach, (818) 368-6243.

ABACUS (Atari Bay Area Computer Users Society) All ATARI users or prospective users are welcome. Membership ($15/year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month, Fort Mason, SF, Room 300, Bldg. C, 10 am-2 pm. Contact Bill Zinn, P.O. Box 1823, Mill Valley, CA 94941. (415) 753-8483.

COMMODORE

Club 64 National user group. Monthly newsletter, BBS, group purchasing, public domain software, much more. Contact: Robert Johnson, (213) 925-4049.

San Diego Commodore Users Group Meets third Tuesday, 7-10 pm, at VFW Bldg., 19th and Broadway, San Diego. Contact Jane Campbell, (619) 277-7214 (between 5 and 9 pm) for more information, or write: P.O. Box 86531, San Diego, CA 92138-6531.

20/64 Computer Users Group — San Jose Meets first Sunday of the month at the Theatre Building, San Jose City College, from 6 to 9 pm. (Donations requested to help defray cost of renting meeting space.) Call Herb Miller, (408) 253-2064 for more info, or write P.O. Box 18473, San Jose 95158.

20/64 Computer Users Group — San Jose North Valley Meets second Saturday of the month at the second floor Community Room of Montgomery Ward's, Capitol and McKee Roads, San Jose, from 10 am to noon. (408) 253-2064.

20/64 Club The Cupertino chapter of the 20/64 club for Commodore users meets the second Sunday of each month, Cupertino Public Library, 6 pm. Contact Rex Ackerman, P.O. Box 61063, Sunnyvale, CA 94086. Phone (408) 245-7270.

20/64 Computer Users Group — Campbell Meets the fourth Tuesday of the month at the Campbell Public Library, 70 North Central Avenue, Campbell, from 6:30 to 9:30 pm. (408) 253-2064.

20/64 Computer Users Group — Gilroy Meets the second Wednesday of the month at the Gilroy Public Library, 7397 Rosana Street, Gilroy, from 7 to 9 pm. (408) 253-2064.

Diablo Valley Commodore Users Group Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 838-2838 for more info.

Napa Valley Commodore Computer Club Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

Lake County Commodore Users Group Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

Marin Commodore Club Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

PUG of the Silicon Valley Commodore 64 (PETs, 8032s, 2001s also). Friendly computer group established back in 1977

The Commodore Connection. Newsletter, BBS, public domain disks, dealer support and more. Approved member of Commodore World. Call (415) 458-3318 8 am - 8 pm or 8 pm - 8 am for the BBS. Meetings 1st and 3rd Mondays, Neighborhood Center, Civic Ave., Pittsburg, CA, 7:30 pm.

Peninsula Commodore User Group Public domain library, demonstrations, user help, newsletter. Membership is $25 per year. Non-members pay $2 at door. Meetings are 3rd Tuesday of each month. Meeting place is the Church of the Good Shepherd Hall, 1300 5th Ave., Belmont (across from city hall). For more info call (415) 595-5452 between 9 am and 6 pm, or call our BBS at the same number after 6 pm.

COMMODORE

San Fernando Valley Commodore Users Group Meets second Wednesday of the month at Patrick Henry Junior High on Louise Ave. between Devonshire and San Jose in Granada Hills, near 118/405 freeway interchange. Contact Tom Lynch, 21208 Nashville, Chatsworth, CA 91311, (818) 709-4736.

San Luis Obispo Commodore Computer Club 1766 9th St., Los Osos, CA 93402. (805) 528-7475 BBS.

The Commodore Users Group - San Juan Capistrano This group of C64 users meets the second Saturday of every month from 9:00 am till 12:00 at Great American Federal Savings and Loan, 32232 Camino Capo, San Juan Capistrano. For info call 496-5745.

Orange County Commodore Technical User's Group C-TUG. Orange County's Commodore user group. Club newsletter, two 300/1200 baud BBSs, door prizes, SIGs in Comal, DOS protection, data bases, wpros, and BASIC. Custom software and ROM chips, and just plain good times. Meetings at Mercury Savings and Loan, 1095 Irvine Blvd., Tustin, CA 92680, fourth Sunday of the month, 11 am. Contact Tony Soto, P.O. Box 1497, Costa Mesa, CA 92628, (714) 953-0598.

C-TUG South Orange County. Classes on BASIC, M/L & Assembler; large public domain library, club newsletters. 300/1200 Baud Printer BBS. (714) 458-1258, El Toro. Meetings 2nd Saturday of the month, Mercury Savings, 23021 Lake Center Drive, El Toro, 2-6 pm.

Hollywood User Group (HUG) for Commodore 64. For further info write HUG, P.O. Box 38313, Hollywood, CA 90038; or call (213) 463-8973 (voice) or the HUG 1 BBS (213) 874-8253 24 hours a day.

Southern California 64 Users Group. Learn more about your Commodore 64. Extensive public domain disk library. Meet at Mid Cities Bank in Gemco shopping center on Bellflower, just south of 91 Freeway, 7 pm, 3rd Tuesday of every month. Contact Joe Allain, 3852 Riverton, Studio City, CA 91604, (818) 985-2647.

EPSON

Cursor Club — Epson 402 W. Arrow Highway, Suite 6, San Dimas, CA 91773. (714) 559-8361, Bulletin Board: (714) 592-6316.

Foothill Epson User Group. We meet the fourth Tuesday of every month at Sparr Heights Community Bldg., 3311 Downing St., Glendale, CA, 7:30-9:30 pm. All are invited, speakers, questions, products, public domain disks, etc. Contact Gerald Jamriska, 2960 Hawkridge, La Crescenta, CA 91214, (818) 248-7133 for more info.

Epson Users Group of Orange County 6075 Jeffrey Mark Street, Cypress, CA 90630, (213) 414-4817.

Epson Users of San Diego P.O. Box 87448, San Diego, CA 92138, (619) 560-7604.

High Desert Epson Users Group 933 Cottonwood Drive, Barstow, CA 92311, (619) 256-3541.

PSC/QX 2934 Wilshire Blvd., Santa Monica, CA 90403, (213) 453-4535, Bulletin Board: (213) 474-4952.

South Bay Epson Users Group 1115 Cerise Avenue, Torrance, CA 90503, (213) 328-9916, Bulletin Board: (213) 618-1940.

XT COMPATIBLE SYSTEM

Includes: 256K Motherboard w/case, 130w power supply, keyboard, floppy controller card, 2 ½ ht. drive, 6 pak compatible multi-function board w/384K, color graphics card

Sale $995.00

Multi-Function card with 384K Ram & Game included	$150.00
AST-6 Pak with 384K Ram & sidekick software included	$249.00
Sigma Designs-Maximizer with 384K Ram included	$185.00
Quadram board with 384K Ram & Game included	$209.00
DISK I/O Card-Flappy Disk Cantraller, 2 Serials, parallel port, clock & game (2nd Ser. apt.)	$120.00
256K Ram card plus parallel part with 0 memory option	$57.00
Serial card with 1 serial part	$45.00
Serial card with 2 serial ports	$53.00
Flappy disk control card with cable & bracket (PC)	$49.00
High Resolution Graphic calar card 400 by Sigma Designs	$550.00
Qubie 300-1200 8aud Madem for PC (Internal)	$195.00
Qubie 300-1200 8aud Modem far PC (External)	$195.00
Color graphic card (RG8 & Compasite)	$82.00
Monachrame card with parallel part	$90.00
7 slats Mother Board - XT campatible BIOS Ram included with built in Floppy cantraller, 2 serials, 2 parallel ports, real time clock & 640K included	$425.00
8 slots XT-campatible Mother Board fully populated to 256K	$199.00
PC-88 CPU card - 7 slots PC spacing mother bus, 4.7 mhz 8088 cpu, supports the 8087 math coprocessar, full I8M bus compatible, twa 2764 Epram sockets for system firmware, 1 PC 8IOS Rom included	$250.00
Sigma Expansian Chassis - 100 watt power supply, 8 slots case, 1 pair transceiver cards included with extension cables	$695.00
Hard disk control card by DTC 51508X with cables	$180.00
Hard disk control card by Omti with cables	$165.00
WD 1000-50 hard disk contraller for general purpose	$90.00
10M8 ½ height hard disk by Micrascience #612	$365.00
20MB ½ height hard disk by Micrascience #HH725	$550.00
20MB ½ height hard disk by Seagate ST225	$485.00
10M8 ½ height hard disk by TEAC #SD-510	$335.00
Teac FD-55B ½ height DSDD	$95.00
Shugart 5A-455 ½ height DSDD	$90.00
Panasonic JA-455 ½ height DSDD	$90.00

WATCH OUT!!

Not v 6, Not V *!!

Turbo YOUR PC/XT with our V20 CPU Chip. (8088 replacement)
20 to 80% increase in speed Performance
Installed in less than 10 minutes

Special $14.95

Tandan 100-2 full height DSDD	$110.00
CDC full height DSDD	$110.00
HP full height DSDD	$75.00
PC keyboard	$70.00
Keytranics 5151 compatible keyboard	$115.00
PC-6 slats (rear switch) hinged top case	$65.00
XT-8 slots (side switch) hinged tap case	$65.00
XT-8 slots (rear switch) hinged tap case	$65.00
Parallel part to Centronics cable 8 feet	$12.00
Parallel part ta Centronics cable 10 feet	$15.00
D 25 male-male serial cable 6 feet	$15.00
D 25 male-female serial cable 6 feet	$15.00
D 25 female-female serial cable 6 feet	$15.00
130 watt power supply (rear switch)	$95.00
130 watt XT pawer supply (side switch)	$95.00
Manitar stand - 11" x 10.4"	$10.00
Monitar stand - 14.2" x 12.2"	$14.00
Jaystick for Apple * II, Apple * IIe, PC	$18.00
5¼" flappy diskettes storage holds 100	$13.50
AC power center with surge protection	$12.00
9 slot mather bus-XT spacing	$30.00
8 slot mother bus-PC spacing	$30.00
Nashua diskette DSDD (10 per box)	$14.00
Apple* II campatible switching power supply: autput + 5VDC 5A; –5VDC 0.5A + 12VDC 2.5A; –12VDC 0.5A; Size 9.8" L x 3.5" W x 2.2" H	$46.95
Apple* II type DC plug	$49.95
16K Ram Expansion card	$35.00
Flappy controller card for Apple*	$40.00
Add-on disk drive with cabinet + cable for Apple*	$90.00
Apple* II ½ height disk drive	$100.00
Apple* C ½ height disk drive	$115.00
Analog card far Apple* II full height drive	$17.00
Apple* keybaard (upper case anly)	$25.00

*A Registered Trademark of Apple Computers Inc.

Microware Exceltek

421 Grand Avenue, 2nd Floor, South San Francisco, CA 94080
T (415) 952-5375 77 • Fax (415) 952-3057
Monday-Friday, 9-5pm

Technical Line & Santa Clara Retail Store, 2110 Walsh, Unit D
(408) 727-0906
1-6pm Monday-Friday, Closed Wednesday, Sunday
Stop by or order by mail

All Parts 100% Guaranteed!

Terms: For shipping & handling charge (under 1 lb.) include $2.50 for UPS Ground, $3.50 UPS Blue, $3.50 for 1st Class Mail C.O.D. Calif residents add 6½% sales tax.

FastPak Business Mail System

Correspondence
Direct Mail
Mailing Lists
Addressing
Form Letters
Tickler Files
Newsletters
Sales Letters
Credit Letters
Sales Follow Up
Collection Letters
Boilerplating
Envelopes
Invoicing
Labels
Notices
Resumes
1099 Forms
Forms Fill-in

Premium Software
Affordable Prices

Any place you need a name and address

FastPak Mail from DHA Systems & Software. A complete library of programs that does everything for mail but lick the stamps. No frustration, no learning, no set-up. Easy to use. Easy to get started.

Organize all your name, address, and phone files in one place. Easy fill in the blanks for input and correction. Add your own codes. Fast, easy, flexible sort. Select names for special mailings.

Run labels and letters at the push of a button.

FastPak Mail includes a powerful system for merging letters and mail files for any kind of letter writing — from routine correspondence to personalized direct mail letters.

"Your product is excellent . . ." — *John Stevenson, Experts in Direct Marketing*

". . . the best direct mail product aid I ever bought." — *Ralph Thomas, Thomas Publications*

"We are totally amazed at what your mailing list system can do. The sort and merge functions are fantastic, as is the entire package in general." — *Steven Friedman, SHF Software Systems.*

Merge - Works with all the popular word processors, Word, Wordstar, Multimate, etc. Create form letters with fill-ins. Easy enough for 1 letter, powerful enough for 5000.

Sort, Select, Combine Lets you organize your files anyway you want, by zip, names, or special codes.

Conversion - no need to retype your list. Easily convert your existing lists to our format.

Purge - Eliminate duplicate names

Economical Easy to buy **$79.95**

DHA Systems & Software

832 JURY COURT / SAN JOSE, CA 95112 / (408) 947-1011

COPY II PC
OPTION BOARD

At last, an almost foolproof method of making archival backups of protected software! The Copy II PC Option Board is an add-in board that will give your PC the same disk duplication technology used by most disk duplication firms (who put the copy protection on software in the first place!).

DUPLICATES NEARLY ALL* PROTECTED DISKETTES!

The Option Board can easily backup almost all protected diskettes for the IBM PC, including ones software-only backup programs can't touch! It even includes a track editor that will allow the more technically inclined to look at protection schemes and edit any data on a diskette.

The Option Board uses a full size slot in an IBM PC, XT, or AT (with at least 1 360KB floppy disk drive), Compaq Deskpro. Compaq Portable requires an extra $15 cable.

CENTRAL POINT Software, Inc.
9700 SW Capitol Hwy., #100
Portland, OR 97219

503/244-5782
M-F, 8-5:30, W. Coast Time
VISA CHECK, COD WELCOME
(Prepayment Required)

$95.00
plus $3 s/h ($12 outside U.S.)

*Except those "protected" by physical disk damage.

Now Available! Put all the most popular **disk utilities (even undelete!)** together with a powerful DOS interface. Then make them ***resident*** and what do you have?? **PC TOOLS!** PC Tools lets you run nearly any DOS command *within any other running program.*
JUST $39.95 plus s/h.

BEST DISKETTES IN THE WEST FOR LESS!

XIDEX PRECISION DISKETTES
67¢ ea. SSDD 87¢ ea. DSDD

Generic Bulk Diskettes
55¢ ea. SSDD 65¢ ea. DSDD

Life time warranty • 100% error free • Reinforced hub rings • Tyvek sleeves • Labels • Write protect tab • Boxed

Box of 10	SSDD	DSDD
☐ Dysan	$20	$22
☐ Xidex	$6.70	$8.70
☐ Polaroid	$14	$16

Free UPS Shipping

Send your order with check to:
DATA BUREAU INC.
9016 Wilshire Blvd. #350
Beverly Hills, CA 90211
Tel. (213) 479-0345
CA Residents add sales tax

SAVINGS OF 35% to 75% on Software and Diskettes

COMPUTERIA
computer rentals
IBM®
apple®

WE RENT COMPUTERS !!!
Hourly Daily Weekly Monthly

NOW AVAILABLE FOR RENT
Apple LaserWriter & HP LaserJet

11742 W. Pico Blvd. W.L.A.
(1/2 Block W. of Barrington)
477-0518

USER GROUP NETWORK

EPSON

Epson Computer Club of America. Monthly meeting 2nd Saturday of the month at 10 am, Mercury Savings and Loan, Irvine Blvd. one block east of Newport Ave. Messages Epson West Bulletin Board (714) 630-7104 User area B:15. Monthly newsletter "The Help Key." Contact Roy Boorman, 4021 Winterhaven St., Yorba Linda CA 92686, (714) 524-9483.

San Fernando Valley Epson User Group. TUG-NET SIG, monthly newsletter, BBS, group purchase, public software, classes. Meetings at Western Federal Savings, 14600 Roscoe, Van Nuys, 3rd Wednesday, 7 pm. Contact Tom Keyser, P.O. Box 1524, Reseda 91335, (818) 705-6300.

FORTH

FORTH Interest Group, Los Angeles Chapter. Meets 4th Saturday, 10 am, Hawthorne Public Library, 12700 S. Grevillea, Hawthorne. Contact Phil Wasson (213) 649-1428.

FORTH Interest Group, Orange County Chapter. Meets 1st and 4th Wednesdays, 7 pm. Call Noshir Jesung for info. (714) 842-3032.

FORTH Interest Group, San Diego Chapter. Meets weekly, Thurs., 12 noon, contact Guy Kelly (619) 268-3100 ext. 4784.

FUJITSU

Want User's Group Info Have Fujitsu Micro 16, am looking for a user's group or BBS. Contact Greg Lucido, 5199 E. Pacific Coast Highway, Long Beach, CA 90804.

HEWLETT-PACKARD

Club of Hewlett-Packard Hand-Held Users (CHHU). HP handheld users worldwide support CHHU as a noncommercial, open, independent club dedicated to applying today's machines and making a contribution to the true personal computer of tomorrow. Send SASE for more info to Richard J. Nelson, 2545 W. Camden Place, Santa Ana, CA 92704, or call (714) 754-7757 for meeting directions.

IBM

The North Orange County IBM PC Users Group These people are interested in helping any PC users. They meet the second Tuesday of each month at the Sunny Hills Racquet Club in Fullerton at 7:30.

The Greater South Bay IBM PC Users Association Any L.A. area PC or compatible owners are welcome to attend these meetings at the TRW cafeteria on Compton Blvd. Meeting time is 7:00 pm on the third Thursday of each month. For info call (213) 519-9365.

The Claremont Computer Club This club is for any interested IBM PC users. Meeting starts at 7:30 on the third Monday at the Galileo Edwards Bldg. on the Harvey Mudd Campus. For info call (714) 626-2286.

Technical Users Group (TUG-NET). For CP/M & MS-DOS PC users. Meets on the first Monday of each month at 7:00 pm. Valley Plaza Park, Community Room, 12240 Archwood St., North Hollywood, CA. Contact Mike Faith - (818) 994-6567.

UCLA PC Users Group. IBM/PC or compatible owners welcome to join us on 2nd Tuesday, 7 pm. Public domain library, SIGs, and newsletter. NPI Auditorium, UCLA, Westwood Plaza, Level C. Contact Anne Sylvester, 601 Ninth St., Santa Monica, CA 90402, (213) 451-5390.

IBM

Pasadena IBM User's Group. Meets 4th Wednesday of each month at Cal Tech, Steele Building, Room 102. For more info send SASE to Steve Bass, 711 E. Walnut Street # 305, Pasadena, CA 91101, (818) 795-2300.

LEADING EDGE

Leading Edge User's Group. A user's group of predominantly Leading Edge users and other similar machines with high clock speed. Public domain software, demos of software/hardware. No fees. Meetings 7:00 pm, 2nd Wednesday of the month, 12792 Valley View, Suite F, Garden Grove, Contact Dana Nutter or Bruce Fruchter, (714) 891-2001 for information.

LISA

The Lisa Club of Los Angeles This is a brand new club just forming for Lisa owners. Meetings are scheduled to be the first Monday of each month. They have no permanent meeting place as of yet, but for information call (213) 852-4994.

MACINTOSH

Los Angeles MacIntosh Group (LAMB) Membership fee is $25/yr or $15/yr for students. Membership includes 12 issues of MACDIGEST newsletter, access to public domain library, BBS, discounts at local stores. Meetings at Madison Elementary School, 11th and Arizona Ave., Santa Monica, 2nd Thursday of the month. Contact J. Baram, (213) 392-5697 for information.

a LA MAC. A networking and information organization for Macintosh users. Regional meetings three times monthly in varying locations in LA area. Contact Ron Bastone, P.O. Box 27429, Los Angeles, CA 90027. (213) 462-2860.

Ventura County MacIntosh Club Mac and Lisa users invited. Membership $21/yr.; newsletter, software library, discussions and ideas. P.O. Box 7754, Oxnard, CA 93031, (805) 983-1610, (805) 499-2824.

Mac Valley Users Group. For $20/yr. membership fee you too can enjoy meetings chock full of software/hardware presentations, public domain software library, Mac articles index, software and accessory raffles, and help hotline. Broad range of users, very friendly to novices. Meetings at Burbank High School Cafeteria, Burbank Blvd. at 3rd St., Burbank, CA, third Tuesday of the month, 7:30 p.m. Contact Ruth Stever, P.O. Bo 4297, Burbank, Ca 91503, (818) 848-1277.

NEC

Orange County NEC Users Group (OCNUG) Dedicated to NEC-APC computers, CP/M-86 & MS-DOS. Always room for any experience level. Meets 3 pm, third Saturday of the month. 6642 Lenore, Garden Grove. CA 92645. Call John Bingel at (714) 897-7656 for more info.

OSBORNE

Osborne National Users Group. Anyone interested in CP/M computer systems is welcome. Free admission. Speakers, questions and answers. Join our group for $10.00 yr. and copy public domain software from library. Meetings at 20630 Lassen St., Chatsworth, 2nd Friday of the month, 7:00 pm. Contact Alicia Fahey, P.O. Box 424, Northridge, CA 91328, or call (818) 709-6202 for more info.

OSBORNE

Osborne Komputer Owners Klub (OKOK) meets 2nd Tues./mo. at 6:30 pm on the Cal-Tech campus in the Winnette Lounge Building on San Pasqual Street in Pasadena. Contact Lionel Sorraco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Osborne National Users Group meets 2nd Fri./mo. at 7:30 pm at Wizard of Oz, 20630 Lassen St., Chatsworth, CA 91311. Contact Art Schlefstein, (818) 709-6969.

RADIO SHACK/TRS

South Bay Color Computer Club TRS-80, TDP-100, Dragon. Meets third Friday of the month at Mercury Savings, 22939 Hawthorne Blvd., Torrance. Info: Andrew Corlett, 1435 W. 172nd St., Gardena, CA 90247. (213) 538-8394.

The Orange County TRS-80 Group This club is for all TRS users from beginning to expert. Meetings take place the third Sunday of every month at Chapman College, 1:30 pm. For info call 638-7889 after 7:00 pm.

The California Computer Federation, Spearheaded by some of the best authorities on the TRS-80 color computer, the California Computer Federation promises to be a huge success. For additional informatkion write to CCF Info, 366 W. Providencia, Burbank, CA 91305, or phone BBS #s (818) 886-6041 or (818) 787-0433. Meetings in Van Nuys area, fourth Tuesday of each month.

SANYO

Sanyo-MS/DOS Table Top Computers, 14717 South Prairie Ave., Lawndale, CA 90260. (213) 679-1151.

TEXAS INSTRUMENTS

LA 99er Computer Club TI 99/4A support, classes and SIGs, large software library, monthly newsletter. Demonstrations, bulk purchase discounts on hardware, software and books. A good group to join. Meetings at Torrance Public Library, 3031 Torrance Blvd., Torrance, CA. 4th Wednesday of the month, 7 pm. Contact Terrie Masters, 148 S. Maple Drive, Beverly Hills, CA 90212, (213) 271-6930.

The TI-99 Club Yes, there still are a lot of 99's and 99/4a's around. If you own one, then get in touch with these people. They have good info for TI owners. Meetings take place at the Westminster Community Center on the third Thursday of every month at 7:00 pm. For info, call (714) 842-0859.

West Side TI Texas Instruments support group forming, users only, to map, trade, barter and exchange ideas, knowledge, and PD software. Meetings 3rd Tuesday of the month. Contact Fred L. Russo for information: 2021 Ocean Ave. #126, Santa Monica, CA 90405, (213) 392-3217.

San Gabriel Valley TI 99/4 Users Group meets 1st Wed./mo. at 6:30 pm in the Covina Parkway, West Covina, CA. Contact Tom Padilla, (213) 330-8240.

TOMY

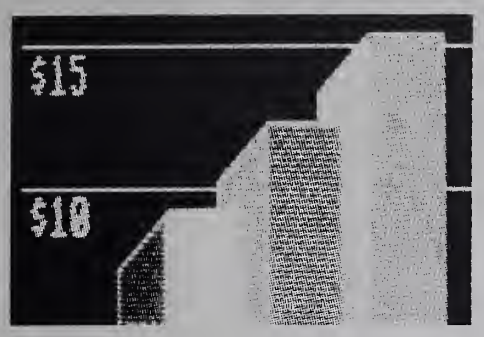
Tomy Tutor computer user group. Contact Eugene C. Dinovo, P.O. Box 37, Sepulveda, CA 91343.

WANG

Wang WP Users Group. Meets 4th Thurs. of month, 6 pm. Monthly newsletter, speakers, questions, information network, products. Call for meeting place: Cindy Randoll, (818) 980-6622.

QUADCOLOR™

Color it with Quadcolor I. Brilliant color and graphics for your IBM® PC or XT.



If you're considering a color graphis adaptor, you'll buy Quadcolor I, only $255 suggested retail. Why settle for less!

Advantages: • Comes with "Dr. Halo" Quadpaint software • 16 colors at your fingertips with 2 true colors made from foreground colors • 32K of on-board memory for high resolution graphics • Flicker-free smooth scrolling • Stores 2 complete screen pages in graphics mode and 2 complete screen pages in memory • Pen light interface • Hardware & software, IBM graphcis adaptor compatible • Composite output • RF modulator connection provided • Animation effect ability • Expandable with Quadcolor II upgrade kit.

IBM is a registered trademark of International Business Machines Corp.

QUADSprint™

Upgrade Your IBM PC to AT Speed for Under $650
Suggested Retail Price

Quadsprint. Double the speed of your IBM personal computer, just plug in the totally transparent Quadsprint and watch all your PC programs run faster and more efficiently than ever before.

QUADRAM™
An Intelligent Systems Company

- Under $650 suggested retail.
- Includes the ultra-fast 10mhz 8086 microprocessor.
- Compatible with any 8088 based software.
- Easy to install.
- Has 4K disk cache memory.
- Transparent to all existing software.
- Now available at your local retail store.

QUADCOLOR 1 and QUADSPRINT can be seen at these Quadram Dealers:

The PC Edge
2975 Scott Blvd., Suite 101
Santa Clara, CA 95050
408-970-0733

Computer Biz
4482 Pearl Ave.
San Jose, CA 95123
408-723-3363

Microage
1910 W. El Camino Real
Mountain View, CA 94040
415-964-5555

PC Support
1250 Oakmead, Suite 101
Sunnyvale, CA 94086
408-746-2772

Mindscape Software
1132 B Saratoga Sunnyvale Rd.
San Jose, CA 95123
408-996-7727

Computerland Campbell
2160 S. Bascom Ave.
Campbell, CA 95008
408-559-4404

UAS
1655 N. California
Walnut Creek, CA 94596
415-943-6848

Computertime
Three Embarcadero Center
San Francisco, CA 94111
415-397-6776

Entre
411 Grand Ave.
Oakland, CA 94610
415-839-5230

Paradise Computer Supplies
3705 Mt. Diablo Blvd.
Lafayette, CA 94549
415-283-6353

Computerland Dublin
7190 Regional St.
Dublin, CA 94568
415-828-8090

Computerland Albany
990 San Pablo Ave.
Albany, CA 94706
415-527-8844

Computertime
1218 Town & Country Village
Mill Valley, CA 94941
415-383-8800

Computertime
1115 Third St.
San Rafael, CA 94901
415-459-8080

This Ad Sponsored by Infotools, An Authorized Distributor of Quadram Corp. Products

SUBSCRIBE

Keep up with California computer news!

California has needed a magazine for computer users and MicroTimes is it!

If you're having trouble finding MicroTimes in your area, get your own personal copy delivered by mail.

California's Computer Magazine
MICROTIMES

Send me the next 12 issues for $9.95

☐ cash enclosed ☐ charge card

Visa/Mastercard # _____

Expires _____

Signature _____

Name (please print) _____

Address _____

City _____ State _____ Zip _____

Mail to: MicroTimes Subscriptions
1800 N. Highland #220
Hollywood, CA 90028

or

5951 Canning Street
Oakland, CA 94609

CLASSIFIEDS

EMPLOYMENT OFFERED

Help! Hot-shot programmer needed for special project. Graphics experience Commodore or PCJR. Call Peter (415) 656-7366. 10

FOR SALE

Disk organized? New disk filing system reorganizes disks. Free samples. Call 1-800-225-0044. Weber, P.O. Box 104MT, Adelphia, NJ 07710. 12

Leather Software Cases for the computer professional. Kevin Harmon, P.O. Box 223157, Carmel, CA 93922 (408) 373-3444. 10

3F ASSOCIATES. Teach disk dr. FD55B $77. IBM PC upgrades. 10MB hard disk w/ controller $448. 20MB removable hard disk with controller $1085. 20MB H/D with controller $590. IBM-PC w/2 drives $1530. IBM-XT with 10MB HD & floppy drive $2225. Call (415) 498-1100. 10

IBM PC PBBS, The War Games. 7:30 am to 11:30 pm. Jason Lin (213) 393-9777. Santa Monica. 300/1200 baud. 10

Enhanced Ambek DXY100 plotter runs autocad, BPS graphics, 10x14 drawing; parallel; $325 PC-PRO. (415) 355-2864. 10

New Apple IIi plus 256K 2DD 1200 Baud modem all cables utilities all software SS WP terminal package. (714) 380-9437, ask for Pat. 12

HARDWARE

LITTLE JACK Computer headphones for Apple II+/IIe, private listening at last! Easy installation, no tools required. $24.95, Educational Software Review, (415) 528-2788. MC/VISA. 11

HP 98165 3½ dual disk, printer, software. Must sell $2000. Ray (408) 263-1230. 10

Victor 4S—like new. Includes memorite, data manager, and execuplan. $2,000 or best offer. John (415) 939-4242. 10

Premium Softcard IIE system—Z-80 64K Ram 80 columns $230—Sean (415) 472-3390. 10

HARDWARE

Osborne-1 w/modem. All softeare $600. (415) 552-0888. 10

HP9896 CPU HP2607A Printer. HP2640-B terminal line conditioner. Three 9885 drives bus/eng software $3500. (408) 947-1692. 10

Printer, Mannesmann—Taily 160L. HS + NLQ. Exc. cond. Original cost $1000+, now $400. (408) 734-0472. 10

New Apple iii plus 256K 2DD 1200 baud modem all cables utilities all software **SS WP terminal package.** (714) 380-9437. Ask for Pat. 12

Enhanced Ambek DXY100 plotter runs autocad, BPS graphics; 10 x 14 drawing; parallel; $325 PC-PRO. (415) 355-2864. 10

Computer Swap Meet. Oct. 19 10am-5pm. San Mateo Fairgrounds. (408) 978-SWAP. 10

Tandon TM-100 drives (2) for IBM PC or equivalent. Used byt warrentied for 30 days with OEM service manual. Best Offer (408) 252-0398. 10

Used S100 boards disk CPU memory for iist. Norm, 130 Baroni, #29, San Jose, CA 95136.

Maxor 140MB hard disk 5¼ full height IBM compatible. New $2500 (415) 763-8705. 10

Apple IIe 128K, 2 drives, monitor, modem, CP/M, printer. $1690; (415) 345-6800. 10

Very Reasonable—Pied Piper—CP/n portable w/1-book drive; perfect² software. Call Dean (415) 527-4140 or (415) 525-8369. 10

Multi-user system. Molecular super 8 20MB. 4 terminals, Free software and maintenance. Tim/John (415) 654-1627. 10

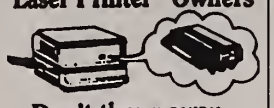
Micromate CPM computer w/ Qume terminal, 128K memory, CPM3.0, much software $500. (415) 962-8463, 9-10 pm. 10

Molecular Supermicro 8 10MB hard disk, applications processor, DBase II. $4000/BO. Andrea Mitchell (415) 642-5208. 11

IBM-PC compatible floppy disk drive $55.00. New guaranteed to work. Call (408) 280-5921. 10

SERVICES

Canon P.C. Copier Laser Printer* Owners



Don't throw away your used cartridges. Get them recharged.

Copier/Printer $30/$40

*H.P. LaserJet, Apple LaserWriter, etc.

GENERIC Toner DISTRIBUTORS

(619) 438-2811 • 283-3811

PERSONALIZED FORM LETTERS are possible and easy using your AppleWorks mailing list database—and InfoMerge, software for the Apple IIe and IIc which can help you in direct mail advertising, fund-raising, job-finding, etc. InfoMerge employs the AppleWorks filecard user interface and has many convenient features. $49.95 (incl. tax) + $2.00 UPS from Anubis Software, 3020 Bridgeway, #274, Sausalito, CA 94965. Order toll-free by credit card by calling 800-227-2400 extn. 914 or in California 800-772-2666 extn. 914. $10.00 for the demo disk. Call for fact-sheet. 11

Need help with Lotus 1-2-3, DBase II, Supercalc, Basic? Call evenings. Michael Duffy (415) 863-5624. 10

Repair of IBM PC, Commodore, power supplies & floppy disk drives. Reasonable fast turnaround. Sedtronics (408) 262-5300. 11

SERVICES

How well do you know yourself? Personalized astrology charts with 12-15 pages of information about your personality, career, and relationships. Learn more about yourself, your loved-ones, and co-workers (wonderful personal gifts for any occasion.) Send $15.00 with name, date, time city, and state of birth for each to: Pioneer Computer Systems, Inc., 40144 N. 174th St. E, Palmdale, CA 93550. 10

Lap Computer Bi-monthly publications. "PC8200 User"—dedicated to nec. 8201A. "Lap Computer" user interaction forum flat screen units. Sample issue $2 ea. Sub $15/yr. Box 608, Dana Point, CA 92629. 11

UNIX & C
Personalized training

Hands-on training for Beg. levels to System Administration. Computer accounts for each student.

HEALTH & WEALTH, INC.
(415) 549-0975

Over A Decade of Experience. Computer consulting on single & multi-user systems. Dbase, Dataflex, Cobol, Pascal, Networking & Telecommunications. Education, Installation & custom programming. David A. Winsett (415) 456-3576. 11

SERVICES

Is Your Computer Hostile? Learn how to take it the EZ way. 2 Hour audio cassette program teaches computer. No technical terms, just plain English. Only $25.00. Send to NATIS, 220 Canal St., #43, San Rafael, CA 94901. Phone (415) 459-1468. 10

Consulting/Training—on site. Professional consultants for all business applications—custom programming—training. Lotus, Framework, Dbase, Cbase, WP, Accounting. (213) 827-4992. 10

On-site consulting/training. Competent, patient consultant will help you with your business applications. (213) 536-8728. 10

CUSTOM/PRE-SET
Computer forms & checks
in short runs 500-10,000
Call for information
Safeguard Business Systems
(415) 982-9037
Personalized Service

SOFTWARE

Public Domain Software — 400 volumes; rent and copy $1 each. Send SASE for information, specify IBM, Sanyo, or Commodore: futuresystems, Box 3040 (R), Vista, CA 92083. 12

SOFTWARE

Condor 3 database management system for IBM PC compatibles with warranty & registration. $250. (818) 994-6917. 10

MacIntosh Aztec "C" compiler, utilities documentation, originally $300, yours for $150/offer (408) 267-9150. 10

Apple Speech Synthesizer. Four disks of software and vocabulary. Attractive external speaker. New $60. (408) 268-3416. 10

IBM Software. 4 disks of games-$15. Custom Micro Software, P.O. Box, 700304, San Jose, CA 95170-0304. 10

Advanced Visicalc, never used, Alle. You send in warranty, $250/obo, MSG (213) 532-7090. 10

WANTED

Unprecedented Opportunity. Growing one-stop shopping and information service via home computer offers ultra income opportunity! Great $$$ potential. FREE DETAILS: DARTON, P.O. Box 3176, Redwood City, CA 94064. 11

5MG or 10MG hard disk wanted for Osborne I. Call Terry (213) 937-3383. 10

N.R.I. Computer/Microprocessor courses wanted. Also N.R.I. TV/video servicing courses, etc. Wtd. incomplete ok. Reasonable. Write: J. Wegner, Jr., P.O. Box 262, Glendale, CA 91209. 10

WILL TRADE

DBase never opened, trade for Hayes 300/1200 modem or RGB monitor. (213) 316-1330. 10

COMPUTERIA
computer rental

LaserWriter is waiting . . . for you to use

Now Available ⇒ Apple //e --> MacIntosh Data Transfer Service

11742 West Pico Blvd.
(1/2 Block W. of Barrington)

Call 213-477-0518

CROSS ASSEMBLERS
FOR 8 BIT MICROPROCESSORS

8051 6502 Z8 8048 6800 6805 6809 7500 COP400

Versions available to run in PC-DOS MS-DOS & CP/M machines

Macros • Built in Screen editor • Linkable Absolute or relocatable code • Conditional assembly

µCT **MICROCOMPUTER TOOLS** µCT

1255C Kenwal Rd., Concord, CA 94521

(415) 676-8497

Computer Specials

Amqute Portable Computers
- same as Compaq but costs alot less
- IBM compatible *512K RAM
- Full 1 year warranty

System II-2-360DR $1350
System III-1-10MB HD; 1-360K DR $1875
System IV-1-20MB DR; 1-360K DR $2175

Citizen Printers

Full 18 month warranty
MSP-10/160CPS.....$285
MSP-20/200CPS.....$375
MSP-15/wide carr/160CPS.....$395
MSP-25/wide carr/200CPS.....$520

For more info call or write

DEKO ASSOCIATES
PO. Box 28108, San Francisco, CA 94128
(415) 574-7973

MICROTIMES CLASSIFIEDS ARE AT YOUR SERVICE

To Place A Classified Ad

Free Ads: Private individuals may have *one* free classified ad of 15 words or less; additional words are 50¢ per word. A phone number, including area code, counts as one word. If you want your ad to run more than once, all subsequent printings will be charged at one half business rates.

Business Ads: Rates are $15 for 15 words or less, 50¢ for each additional word. Again, your phone number counts as one word.

Display Classifieds: Classified ads requiring special treatment (hairlines, all caps, boldface, centering, etc.,) are considered display classified ads. Call Chuck Stanley at (415) 652-3810 or Jeff Rosenfield at (213) 467-7878 for further information.

DEADLINE for classified ads is the 20th of the month *preceding* the issue date (i.e. deadline for the July issue is June 20). Type your ad or print it legibly, using this coupon or a separate piece of paper. BE SURE TO INCLUDE YOUR ADDRESS AND PHONE NUMBER SO WE CAN CONTACT YOU IF NECESSARY. Specify the category you want your ad to run under, and send it with your payment (check, money order, or VISA/MC) to MicroTimes Classifieds, 5951 Canning St., Oakland, CA 94609.

For a mere fraction of your paycheck — buy, sell, trade, whatever. Just $15 for the first 15 words plus 50 cents for each additional word, per issue

Category ☐ Hardware For Sale ☐ Software For Sale ☐ Equipment ☐ Wanted ☐ Services ☐ Will Trade ☐ Video ☐ Employment Offered ☐ Employment Wanted ☐ Personal

Cost of ad _____ X number of issues to run _____ = Amount Enclosed _____

Send check ☐ Money Order ☐
Visa ☐ or MasterCard ☐ Exp. Date _____
Account # _____
Signature _____

Advertisers Name _____
Street Address _____
City _____ State _____ Zip _____
Phone (_____) _____

Send To: MICROTIMES Classifieds 1800 N. Highland Ave. #220 Hollywood California 90028 OR 5951 Canning Street Oakland California 94609

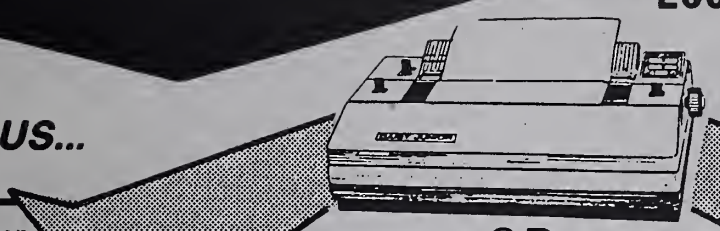
COMPUTER-WORD PROCESSOR
COMPLETE SYSTEM
EVERYTHING YOU NEED IN ONE COMPLETE PACKAGE!

SPECIAL $995.00

$2500 Value ONLY

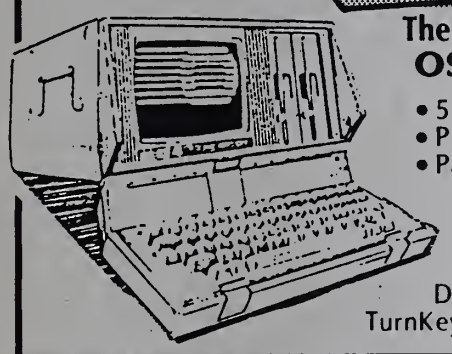
HURRY! STOCK IS RUNNING OUT!

Letter Quality
DAISY JUNIOR PRINTER *PLUS...*



DON'T MISS THIS ONE TIME OFFER!
... YOUR CHOICE OF EITHER

OSBORNE VIXEN™



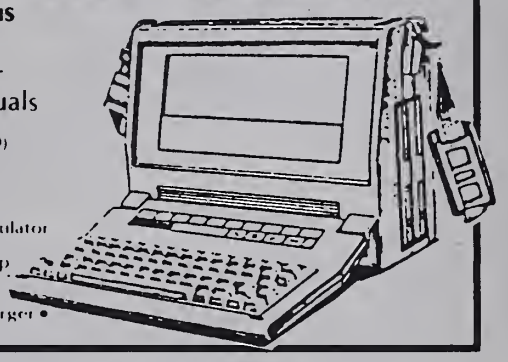
The DAISY PRINTER plus OSBORNE VIXEN™

- 5 Diskettes
- Printer Cable • Manuals
- Paper • Software

You get WordStar, MailMerge®, SuperCalc 2,™ MBasic,™ Osboard,™ Desolation, Media Master and TurnKey. Free. Full Warranty.

-OR-

OSBORNE 3



The DAISY PRINTER plus OSBORNE 3

- 5 Diskettes • Paper
- Printer Cable • Manuals
- **FEATURES INCLUDE:**
- Two 5¼" Drives (360K DS/DD)
- 128K RAM expandable to 512K RAM
- Serial and Parallel Ports
- Free Built-in Software
  - —Four Function Memory Calculator
  - —Real Time Digital Clock
  - —International Time Zone Map
  - —Month-to-Date Calendar
- Internal Battery Compartment
- AC Power Supply/Battery Charger •
- MSDOS 2.1

ADDITIONAL *$100.00 OFF THE ABOVE ADVERTISED PRICE WITH A COPY OF THIS AD

DEALER & MAIL ORDER INQUIRIES ACCEPTED

COMPUTER GARDENS, INC.
47650 Westinghouse Drive, Fremont, CA 94539

MON-SAT 8-6 CLOSED SUNDAY

Phone (415)656-0222 (415)490-7272

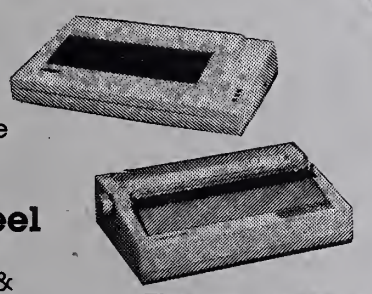
DEALERS JOIN US NOW

- High Quality
- Complete Line
- 100% Compatability
- Available Now

BLUE CHIP
PRINTERS

Dot Matrix
- 150 CPS
- Full Graphic capability
- 10 or 15 inch carriage available
- Near letter quality mode
- Tractor and platen feed

Letter Quality Daisy Wheel
- Typewriter quality
- Variable number of characters & lines per inch
- Numerous typestyles and fonts available



The most powerful, yet inexpensive printer sold in America.

Albany
Monarch Computer
(415) 526-7741

Sunnyvale
Fry's Electronics
(408) 733-1770

Santa Clara
Payless PC Center
(408) 249-8411
Affordable Computer
(408) 249-4221

San Francisco
Aquarian Age
(415) 386-3890

San Jose
Affordable
(408) 251-0102

Milpitas
Data Check
(408) 262-0498

COMPUTECH
Authorized TEAC Distributor

800 Charcot Ave #106 San Jose Ca 95131
408-435-1050

We also distribute: Systems, Hard Disks, Add-on Boards, Tape Back-ups, Floppy Disk Drives, 64K/256/ DRAM, Printers, Monitors and accessories.

• Dealer Inquiry Welcome • Dealers Only •
• Call for Latest Catalog •

SUBSCRIBE

Keep up with California computer news. If you're having trouble finding MicroTimes in your area, get your own personal copy delivered by mail.
California has needed a magazine for computer users and MicroTimes is it!

Send me the next 12 issues for $9.95

☐ cash enclosed ☐ charge card

Visa/Mastercard # _____

Expires _____

Signature _____

Name (please print) _____

Address _____

City _____ State _____ Zip _____

Mail to: MICROTIMES Subscriptions
5951 Canning Street
Oakland, CA 94609

SYSTEM BUGS

Little Computer People Research Project

By David Crane, Sam Nelson, and The Little Computer People Research Team

You may think of Activision primarily as a purveyor of video games. In so thinking, you would be doing the company a grave injustice, since its personnel have long been engaged in anthropological research. The following is an internally circulated memo on the research group's findings, and is reprinted by permission in order to better disseminate the results of Activision's extensive studies.

HISTORICAL PERSPECTIVE

Many people have suspected that there was something more than just electronic components inside of computers since the early days of the computer revolution. How else could designers and programmers entering perfect instructions explain system failures and syntax errors when executing commands? The failures were frustrating and counter-productive, yet their consistency suggested intelligence. We were intrigued enough to begin an investigation of the phenomenon.

In the Fall of 1984, Richard Gold, a Southern California artist/composer with a computer background, adopted the theory that something was living inside his computer because much of the music he programmed came out sounding different than it was composed. Because of his technical limitations, he enlisted the help of James Wickstead Associates, a highly respected engineering firm in New Jersey, to begin his search for the life form.

Word of Gold and Wickstead's work reached us through Malcom Kaufman, an industry observer and producer, in July 1985, and we suggested that our team, Gold and Wickstead join forces in furthering the research. It was in the Spring of 1985 that the breakthrough came and the first little computer person was observed. The discovery confirmed years of speculation that little beings inhabit computers and occasionally cause unexplained hardware and software performance problems.

THE DISCOVERY

Months of exhaustive research finally defined the method by which the beings could be lured out of the computer, allowing observation of them. It was determined that what the beings wanted most was a comfortable environment to live in, so we designed a 2½ story house that resides in software on a diskette and can be loaded into the computer. The house has a large living room, an efficient kitchen, a comfortable bedroom, a bathroom, a study and a recreation room. The house was designed initially for the Commodore 64 computer, on which all preliminary experiments were conducted and on which the first subject was observed. We have now found that the house we have designed can successfully lure out a subject in each computer on which we have tried it.

It was in early July that the "house on a disk" was first loaded into an Apple II computer and a subject moved in. The lifestyles, habits and abilities of the Apple computer people seem very similar to those of the Commodore 64 computer dwellers. The significance of the Apple find lies in the reinforcement of our hypothesis that the little computer people live inside all computers, whether they are in living rooms, offices, college dorms, classrooms or still on the shelves in stores.

OBSERVATIONS

We are currently studying the culture of approximately twelve different subjects. Each looks and behaves somewhat differently, although basic traits and task orientation seem similar. For example, all subjects studied to date are able to play the piano, and musical styles differ. The following lists common traits exhibited:

1. As with homo sapiens, there is a basic need to eat, drink and sleep.
2. Full use is made of the many amenities provided in the house. They talk on the telephone (although their speech is, as yet, incomprehensible), read the newspapers and books we've provided, play music on their stereos, watch television and work at their computers.
3. They appear to be health-conscious and routinely brush their teeth, shower and exercise.
4. They take good care of their pets and make sure they are fed regularly.
5. They have demonstrated a desire to communicate by tapping on the inside of the monitor screen. Another method of communication is through the typewriter we have provided. They can read and write English.
6. The little computer people show a remarkable aptitude for playing games. We have successfully played some card games with them.
7. They can be moody: at one moment happy and at another moment a bit sad. We can, however, reassure them by providing a gentle pat on the head. We've also found that they are very pleased when a gift or food is left at the front door.

This last point opens discussion of the various means of interaction we, as researchers, have had with the little people. We have been able to communicate by typing messages on the keyboards of our research computers and are able to ring the telephone in the house as well as set the alarm clock for a desired time. We also, of course, take care to provide food and water on a regular basis. We have also recently developed the capability of providing food for the subjects' dogs. These capabilities, combined with our ability to play games or give a reassuring pat on the head, have allowed for an extraordinary rapport to develop between researchers and subjects.

They appear to have learned a great deal about our language, art, music, games and habits by observing our use of computers over the years. We believe they learned English by encountering our word processing programs, music through our many computer music programs and games by watching us play many computer games over the years. Apparently, they learn more about mankind every day, as our use of computers increases. Obviously, we have years of study in front of us.

We will continue our research into the lifestyles and customs of the little computer people with emphasis on several immediate goals. First and foremost, we will concentrate on the completion of a commercial version of the "house on a disk" for the Commodore 64 and Apple II computers. We anticipate that a prototype will be turned over to production within the next three weeks so that finished product can be produced this Fall. Next, we will begin to apply our research techniques to other popular computers to further strengthen our hypothesis that the little computer people live inside all computers. Finally, we will initiate studies on foreign computers to determine what differences may exist in language, cultural styles and habits.

In conclusion, the customs and habits of the little computer people take on a real meaning when viewed with the insight provided by Malinowski when he wrote:

> Looking from far above, from our high places of safety in the developed civilization, it is easy to see all the crudity and irrelevance of magic. But without its power and guidance early man could not have mastered his practical difficulties as he has done, nor could man have advanced to the higher stages of civilization.

From time to time, we receive pieces that don't really fit our established editorial formats. Cartoons. Esoteric hints for programmers in languages yet uninvented. Humor articles. In vain we plead, "No, no, we don't do that stuff." People keep sending it anyway, and somewhat to our consternation, occasionally something comes along that overcomes our editorial resistance.

So, to make a long story short, we decided to create a new page for all that material that doesn't fit anyplace else, and to christen it in honor of that fine public domain software which causes hordes of insects to march across the screen of whatever legitimate application you happen to be using. We think this strikes the proper note.

If you, gentle reader, have some particularly intriguing bit of computer-related silliness, off-the-wall information or other bizarre communique to the world at large, send it to us: System Bugs, MicroTimes, 5951 Canning St., Oakland, CA 94609.

BIBLIOGRAPHY

Barzun, Jacques, *The Modern Researcher*, New York, Harcourt Brace Jovanovich, 1957/1977.

Brace, C. Loring, "The Origin of Man" *Natural History Magazine*, January, 1970.

Hunter, David, *Anthropology: Contemporary Perspectives*, Boston, Little, Brown and Company, 1975.

Malinowski, Bronislaw, *Magic, Science, and Religion*, Glencoe, The Free Press, 1948.

"Without question [NFL Challenge] is the finest computer game I've ever seen—but then I like football."
John C. Dvorak San Francisco Examiner

Put the NFL at your fingertips.

Hands-on pro football excitement is as close as your keyboard with **NFL Challenge** from Xor. This is the officially licensed NFL action computer game with offensive plays and defensive sets based on the ones in NFL playbooks, plus complete updatable rosters for all 28 NFL teams. All impressively packaged.

Every game can be the Super Bowl when you take the field with Xor **NFL Challenge** software. Feel the pressure as you choose starting lineups, drive downfield against the clock, and go head-to-head, down-by-down against the league's most innovative offenses and formidable defenses. It's the most intense computer simulation of the pro football experience ever devised.

Xor's **NFL Challenge** requires IBM® PC or PC/XT with DOS 2.0, 256K bytes of memory, monochrome monitor with IBM® monochrome card or RGB color monitor with IBM® color graphics adapter. Also runs on the IBM® PC/AT.

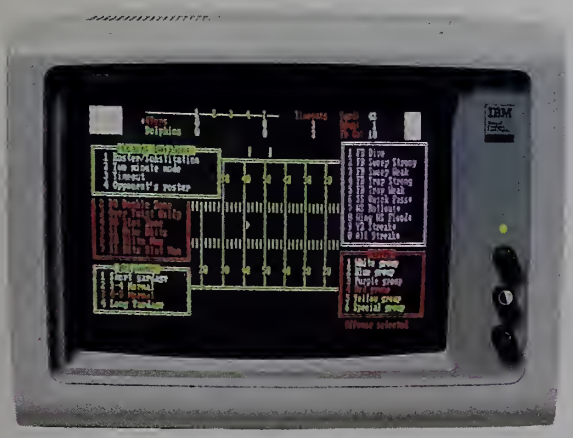
With **NFL Challenge** from Xor, you have 50-yard line seats for every game!

The Next Play

NFL Challenge is already an IBM PC classic, so don't settle for anything less. To kick off your NFL home season, run to your local computer store, or if you're in a hurry-up offense, call for the name of the **NFL Challenge** dealer nearest you.

1-800-NFL-CHAL

(in MN call (612) 938-0005)
Dealers call Navarre: 1-800-328-4827 ext. 1765.



XOR™ CORPORATION
5421 Opportunity Court
Minnetonka, Minnesota 55343
(612) 938-0005

Officially Licensed Product

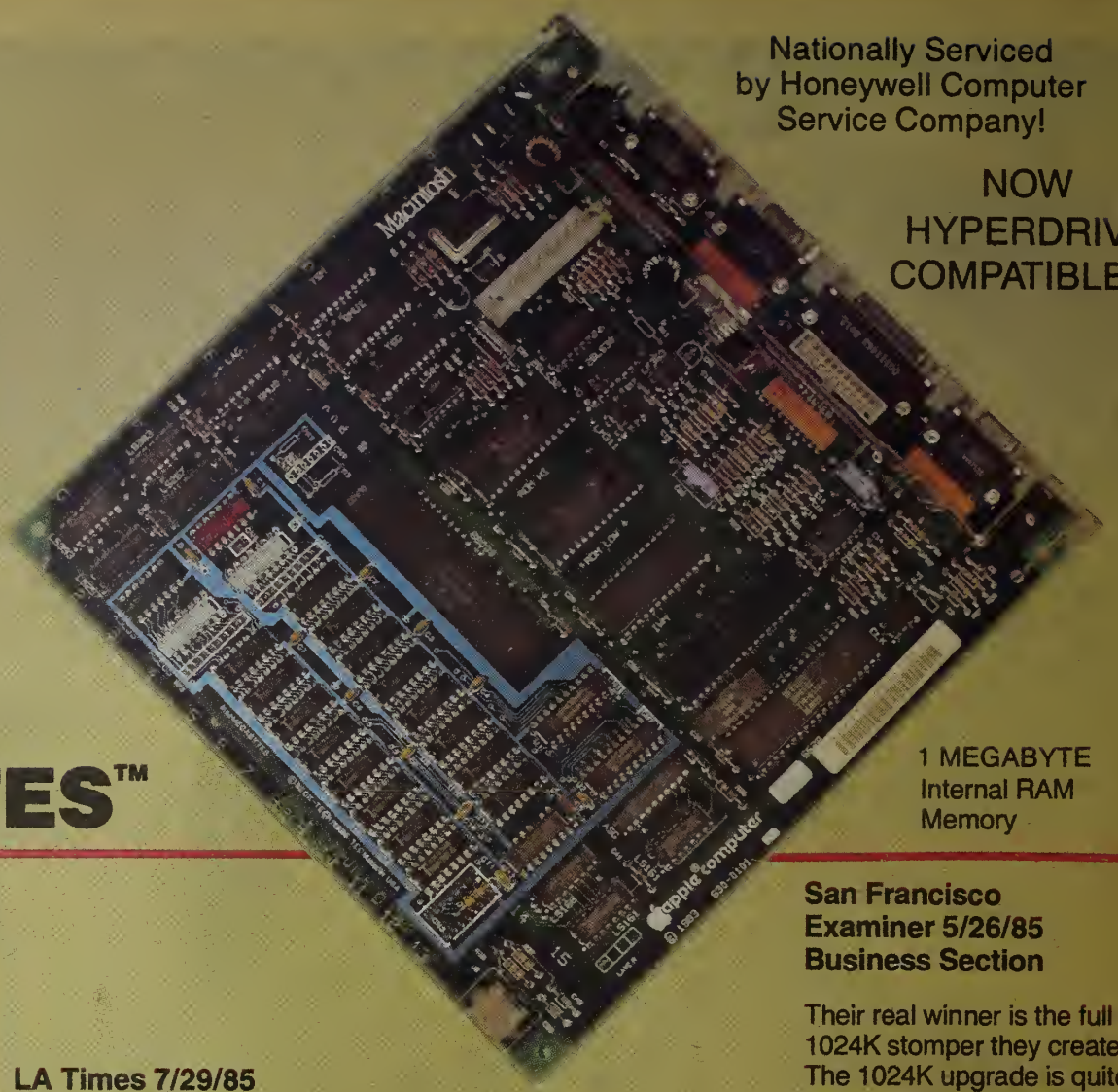
IBM is a registered trademark of International Business Machines.
NFL Challenge is a trademark of NFL Properties, Inc.
© 1985. All rights reserved.

Available at The Wherehouse

Beck-Tech presents

The Power Mac

by MacMEGABYTES™



Nationally Serviced by Honeywell Computer Service Company!

NOW HYPERDRIVE COMPATIBLE! *

1 MEGABYTE Internal RAM Memory

InfoWorld

REPORT CARD

MACMEGABYTES

	Poor	Fair	Good	Excellent
Performance	☐	☐	☑	☐
Documentation	☐	☐	☑	☐
Ease of Use	☐	☐	☐	☑
Setup	☐	☐	☐	☑
Serviceability	☐	☐	☑	☐

Reprinted by permission from InfoWorld 8/12/85

LA Times 7/29/85 Business Section

(RE: Beck-Tech's 1024K) The extra memory enhances the machine in three ways. First, it can be used to create a high-speed "RAM disk drive"; second, it can be used to run several programs simultaneously, and, finally, it can make better use of programs designed to take advantage of as much as a megabyte of memory.

Happily, Jazz recognizes the extra RAM in a one-megabyte system, allowing for much larger files.

—Lawrence J. Magid

InfoWorld 8/12/85 Review Board

"An Honest-1 Meg Mac!"

If you need 1 megabyte of memory in your Mac, MacMEGABYTES is a good solution. . . . both versions consume very little power; therefore, any potential problems of overtaxing the Macintosh's power supply should not arise. MacMEGABYTES does not seem to be incompatible with any available applications.

—Steve Mann

San Francisco Examiner 5/26/85 Business Section

Their real winner is the full 1024K stomper they create. The 1024K upgrade is quite elegant. I loaded up a 128K Mac with this upgrade and found it bug-free. I recommend it.

—John C. Dvorak

The New York Times 8/18/85 Business Section

What is needed is a machine whose direct memory capability measures a full megabyte, or 1024K.

The solution is within reach with a memory unit called MacMEGABYTES from Beck-Tech.

— Erik Sandberg - Diment

INCLUDES FREE SOFTWARE

1. PLUG-IN CIRCUITBOARD - with 512K additional RAM VERY LOW POWER!

2. RAMDISK SOFTWARE. Run large database FAST. Run larger programs. Use 512K for a full size RAMDISK and still have a full 512K Fat Mac! (FREE SOFTWARE)

3. MacMOVIE SHOW - Digital Movie Demo. Amaze your friends with Macintosh Movies.

90 Day Guarantee on All Parts and Labor We Install!
*** Hyperdrive Adapter Kit Available October 11, 1985**

Authorized Beck-Tech MacMEGABYTES™ Dealers

New York City
Killy Corp.
Dr. Pete Killcommons
515 West 59th Street,
Suite 16B
New York, NY 10019
212-307-5718

San Francisco
AAO Computer
Software for Less
Ron Shafer
37 Vicente Street
San Francisco, CA 94106
415-753-1066

Washington D.C.
COMPUTER SERVICE CENTER
Keith Bodwin
10807 Main Street
Fairfax, VA 22030
703-273-0160

Dallas
SMS Systems Corporation
Joe Courtney
555 Ranch Trail,
Suite 206
Irving, TX
817-481-9555

Canada
MICROBOUTIQUE
Mr. Dimo
512 Beaublem East
Montreal, Quebec
514-270-4477, 4489

Auckland, New Zealand
Southern Software Int'l, Ltd
Terry Teague, Les Chapman
58 Symonds Street
Auckland 1, New Zealand
525-398-410

Los Angeles
AEG Electronics
Rick Huntington
19434 Londelius Street
Northridge, CA 91324
818-886-7677

Santa Barbara
FISKCO
Ron Fisk
274 Brentwood Way
Goleta, CA 93117
800-322-8981

New Orleans
JAMES C. MOORE CO.
P.O. Box 972
Ponchatoula, LA 70454
504-386-2329

Pittsburgh
BESCO
Stan Malecki
5284 Steubenville Pike
Pittsburgh, PA 15205
412-923-2533

Geneva, Switzerland
CTM CO.
Kevin Brady
CP82
1213 Petit-Lancy 2, Switzerland
33-22-43

Stockholm, Sweden
SYSTEMSPECIALISTEN
Keith Elkin
Birger Jarlsgaten
11420-Stockholm, Sweden
673-568

Beck-Tech

Claremont Hotel
41 Tunnel Road
Berkeley, CA 94705
(415) 548-4054

Source: CL0765
Telex: 701082